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TESIS DOCTORAL

Market Rewards to Patterns of Increasing Earnings: Effects of Cash Flow Patterns, Accruals Manipulation, Real Activities Manipulation and Conservative Accounting

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Abstract

In this dissertation I investigate whether market rewards to a pattern of increasing earnings vary with certain signals of whether the pattern is genuine or fabricated. Among these signals, I examine growth in cash flows, accrual-based earnings management, earnings management through the manipulation of real operating activities, and conservative accounting. The findings show that market participants assign higher price-earnings multiples to firms when their pattern of increasing earnings is supported by the same pattern of increasing cash flows. I also show that market participants assign lower price-earnings multiples to firms suspected of having engaged in accrual-based earnings management, sales manipulation and overproduction to achieve the earnings pattern. However, market participants do not penalize firms suspected of having achieved the earnings pattern through the opportunistic reduction of discretionary expenses. Regarding the effects of conservative accounting on market rewards to a sequential pattern of increasing earnings, I predict that conditional conservatism enhances the credibility of earnings patterns by introducing constraints to income-increasing earnings management. Using several measures of conditional conservatism, the results show that market participants assign higher price-earnings multiples to firms with a long stream of earnings increases when their accounting is more conditionally conservative.

Resumen

En esta tesis investigo si las recompensas de mercado a un patrón de aumentos anuales continuados en los beneficios varían de acuerdo con ciertas señales de si el patrón es auténtico o resultado de manipulaciones contables. En cuanto a estas señales, considero el crecimiento de los flujos de efectivo, la manipulación del resultado contable a través de devengos, la manipulación de las actividades operativas para mantener el patrón de incrementos del resultado, y el grado de conservadurismo contable de la empresa. Los resultados muestran que los inversores atribuyen mayores múltiplos precio-beneficio a las empresas cuando su patrón de aumento en los beneficios es respaldado por el mismo patrón de aumento en los flujos de efectivo. Los resultados también muestran que los inversores asignan múltiplos precio-beneficio más bajos a las empresas sospechosas de haber incurrido en manipulación contable a través de devengos, manipulación de ventas, y sobreproducción para lograr el patrón de los beneficios. Sin embargo, los participantes del mercado no penalizan las empresas sospechosas de haber logrado el patrón de beneficios a través de la reducción oportunista de los gastos discrecionales. En cuanto a los efectos de la contabilidad conservadora en las recompensas de mercado a un patrón secuencial de aumento en los beneficios, espero que el conservadurismo condicional realce la credibilidad de los patrones de beneficio mediante la introducción de restricciones a la manipulación contable al alza. Utilizando varias medidas de conservadurismo condicional, los resultados muestran que los participantes del mercado asignan mayores múltiplos precio-beneficio a las empresas con un patrón continuado de aumento anual en los beneficios cuando su contabilidad es más condicionalmente conservadora.

Contents

Chapter 1. Introduction

In this dissertation, I investigate whether market rewards to a pattern of increasing earnings vary with certain signals of whether the pattern is genuine or fabricated. In particular, I empirically examine whether market participants price differently firms with a pattern of increasing earnings that at the same time (i) report the same pattern of increasing cash flows, (ii) have discretionary accruals that if not included in earnings would break the earnings trend, (iii) alter optimal operational transactions to avoid breaking the earnings pattern, and (iv) exhibit a higher degree of conditional conservatism to increase the credibility of the earnings pattern.

The first article in the dissertation is entitled "Market Rewards to Patterns of Increasing Earnings: Do Cash Flow Patterns, Accruals Manipulation and Real Activities Manipulation Matter?" While prior research provides evidence of market rewards for firms with a long stream of earnings increases (Barth et al. 1999), and of earnings management to maintain the stream (Myers et al., 2007), I am not aware of any paper that directly analyzes whether the market rewards to these firms with a long stream of earnings increases differ with signals of whether the earnings stream is genuine or fabricated. In our empirical tests, I use growth in cash flows to assess whether the earnings pattern is real. I define non-suspect beaters as those firms with five years of consecutive increases both in earnings and in cash flows. I then identify two types of suspected firms: (a) firms with five years of consecutive earnings increases that present discretionary accruals that, if not included in earnings, would fail to report the pattern of increasing earnings, and (b) firms with five years of consecutive earnings increases that engage in inefficient operational practices with the objective of managing earnings, and that would have broken the pattern of increasing earnings in the absence of those inefficient operational practices. I expect suspected firms to, at least, receive

lower rewards than non-suspect beaters.

The empirical analysis generates the following major findings. First, market participants assign higher price-earnings multiples to non-suspect beaters. Second, market participants assign lower price-earnings multiples to suspect firms that use accrual-based earnings management to achieve a five-year pattern of increasing earnings. Third, the price-earnings multiples are reduced when the earnings pattern is achieved through increasing sales on credit beyond whatever is advisable by common practice. In addition, market participants assign lower price-earnings multiples to firms suspected of having increased production more than necessary to reduce unit costs and increase earnings. However, market participants do not reduce rewards to firms suspected of producing the earnings pattern through reductions in discretionary expenses, such as R&D expenses, and selling, general, administrative and advertising expenses.

This study contributes to three different strands of prior literature. First, this research differs from previous research in that I focus on the specific rewards to a long stream of consecutive earnings increases and on relatively simple signals of whether the stream is genuine or fabricated. Second, I contribute to the literature on the effects of real earnings management. The results that investors provide lower rewards to firms with signals of having used real earnings management to fabricate the streams are consistent with investors assuming that at least some types of real earnings management have negative effects for firm value. Finally, this study also contributes to the literature on earnings smoothing. From the pool of firms with a stream of increases in earnings, those that I label as suspected could be viewed as engaging in some sort of aggressive form of earnings smoothing to maintain the stream. The results that firms suspected of fabricating the earnings stream have the rewards reduced can be interpreted as

consistent with smoothing being penalized by market participants.

The second article is entitled “The Effects of Conditional Conservatism on Market Rewards to Patterns of Increasing Earnings”. This study analyzes whether conditional conservatism affects market rewards to firms that report a long stream of consecutive increases in earnings. The prediction is that market rewards are higher for firms that exhibit a higher degree of conditional conservatism. Conditional conservatism is defined as the requirement of a lower degree of verification for the recognition of losses than for the recognition of gains in the financial statements, resulting in earnings reflecting bad news timelier than good news (Basu, 1997; Watts, 2003a). This study builds on the argument that conservative accounting serves as a governance control structure to curb managerial manipulation on earnings reporting (Watts, 2003, Guay and Verrechia, 2006; LaFond and Watts, 2008). Recent literature also provides consistent evidence that conservatism reduces opportunistic biases in financial accounting (Chen et al., 2007; García Lara et al., 2012; Gao, 2013).

Using a large US sample I show that market participants assign higher price-earnings multiples to firms with a five-year pattern of earnings increases when these firms’ accounting is more conditionally conservative. These results hold after controlling for growth opportunities, firm’s financial and operating risks, market-to-book, and leverage, which are potentially correlated with proxies for conditional conservatism, and with firm’s stock price. In addition, I also control for fixed effects of industry and year.

This study contributes to the literature along several dimensions. First, I connect conservative accounting with a stream of research regarding market rewards on the achievement of earnings benchmarks. I am not aware of any paper that directly analyzes whether market rewards to firms with a long stream of increasing earnings differ with signals of whether the firms’ accounting is conditionally conservative. Second, this

study contributes to a stream of empirical research in accounting conservatism that shows conditional conservatism can lead to positive economic outcomes (LaFond and Watts, 2008; García Lara et al., 2011). Finally, I provide indirect evidence that conditional conservatism improves the information environment of the firm by offsetting income-increasing earnings management in financial reporting (Chen, 2007; García Lara et al., 2012; Gao, 2013).

Finally, in chapter 4 I analyze the role of growth in sales as an additional way of identifying whether the pattern of earnings increases is genuine. I find that firms that report a long stream of consecutive earnings increases not accompanies by the same pattern of growth in sales do not have higher Price-Earnings multiples than firms that do not report the pattern of earnings increases.

Chapter 2. Market Rewards to Patterns of Increasing Earnings: Do Cash Flow Patterns, Accruals Manipulation and Real Activities Manipulation Matter?

Abstract

This study explores whether firms have differential price-earnings multiples associated with their means of achieving a sequential pattern of increasing positive earnings. Our main findings show that market participants assign higher price-earnings multiples to firms when their pattern of increasing earnings is supported by the same pattern of increasing cash flows. Market participants assign lower price-earnings multiples to firms suspected of having engaged in accrual-based earnings management, sales manipulation, and overproduction to achieve the earnings pattern. We find, however, that market participants do not penalize firms suspected of having achieved the earnings pattern through the opportunistic reduction of discretionary expenses.

2.1 Introduction

We empirically examine whether market participants price differently firms with a pattern of increasing earnings that at the same time (i) report the same pattern of increasing cash flows, (ii) have discretionary accruals that if not included in earnings would break the earnings trend, and (iii) alter optimal operational transactions to avoid breaking the earnings pattern. Prior studies show that market participants reward firms that meet or beat certain earnings benchmarks: prior year earnings (e.g., Barth et al., 1999; Myers et al., 2007), analysts' forecasts (e.g., Kasznik and McNichols, 2002; Bartov et al., 2002), or both (Koonce and Lipe, 2010). The results of prior research on whether the market rewards differently firms that manage their accounting numbers to meet or beat these targets are mixed. While some studies show that market rewards are reduced for habitual beaters of either prior year earnings or analysts' forecasts that manage earnings (Francis et al., 2003), that analysts are able to detect firms that avoid reporting an earnings decrease through earnings management (Burgstahler and Eames, 2003), and that abnormal returns do not exist for firms that meet or beat earnings forecasts through accruals management and real activities management in the UK (Athanasakou et al., 2011), other studies show evidence on the contrary. In particular, there is US-based evidence that market participants do not identify firms meeting or beating analysts' forecasts through earnings management (e.g., Bartov et al., 2002; Chen et al., 2010), that market rewards still exist, at least in the short run, for firms that beat forecasts through real activities manipulation (Bhojraj et al. 2009), and that analysts are unable to detect earnings management to avoid losses (Burgstahler and Eames, 2003).

We add to this stream of literature focusing on trends of increasing earnings. While prior research provides evidence of market rewards for firms with a long stream of

earnings increases (Barth et al. 1999), and of earnings management to maintain the stream (Myers et al., 2007), we are not aware of any paper that directly analyzes whether the market rewards to these firms with a long stream of earnings increases differ with signals of whether the earnings stream is genuine or fabricated. In our empirical tests, we identify firms with obvious signals of not having managed earnings to fabricate the earnings stream. We denote these firms as non-suspect beaters. We define non-suspect beaters as those firms with five years of consecutive increases both in earnings and in cash flows. We then identify two types of suspected firms: (a) firms with five years of consecutive earnings increases that present discretionary accruals that, if not included in earnings, would fail to report the pattern of increasing earnings, and (b) firms with five years of consecutive earnings increases that engage in inefficient operational practices with the objective of managing earnings, and that would have broken the pattern of increasing earnings in the absence of those inefficient operational practices. We expect suspected firms to, at least, receive lower rewards than non-suspect beaters.

Using a sample of 22,605 US listed non-financial, non-utility, and profit-making firm-year observations for the period 1995-2007, obtained from COMPUSTAT, our findings are consistent with Barth et al. (1999) that firms with a five-year pattern of increasing earnings have higher price-earnings multiples than other firms. Our empirical analysis also generates the following major findings. First, market participants assign higher price-earnings multiples to non-suspect beaters. Second, market participants assign lower price-earnings multiples to suspect firms that use accrual-based earnings management to achieve a five-year pattern of increasing earnings. Third, the price-earnings multiples are reduced when the earnings pattern is achieved through sales manipulation, that is, through increasing sales on credit beyond

whatever is advisable by common practice. In addition, market participants assign lower price-earnings multiples to firms suspected of having increased production more than necessary to reduce unit costs and increase earnings. However, market participants do not reduce rewards to firms suspected of producing the earnings pattern through reductions in discretionary expenses, such as R&D expenses, and selling, general, administrative and advertising expenses.

Our study contributes to three different strands of prior literature. First, it contributes to the literature on benchmark beating by showing that firms with a stream of consecutive earnings increases receive different market rewards depending on whether the firm shows signals of the stream being genuine (presenting also a stream of increases in cash flows) or the stream being fabricated. Prior research just documents the existence of rewards to the existence of the streams (Barth et al. 1999), and that the streams are in some cases fabricated (Myers et al., 2007). However, the evidence as to whether the rewards to the stream vary with whether the stream might have been fabricated is very limited. Only Francis et al. (2003), who focus on the related case of rewards to habitual beaters, and Burgstahler and Eames (2003), who focus on whether analysts identify firms that manage earnings in one given year to avoid reporting an earnings decrease, tackle a similar issue. Our research differs from theirs in that we focus on the specific rewards to a long stream of consecutive earnings increases and on relatively simple signals of whether the stream is genuine or fabricated.

Second, we contribute to the literature on the effects of real earnings management. Prior research finds mixed results on whether real earnings management have negative (Bhojraj et al., 2009) or positive (Gunny, 2010) effects for firm value. Our results that investors provide lower rewards to firms with signals of having used real earnings management to fabricate the streams are consistent with investors assuming that at least

some types of real earnings management have negative effects for firm value.

Finally, we also contribute to the literature on earnings smoothing. From the pool of firms with a stream of increases in earnings, those that we label as suspected could be viewed as engaging in some sort of aggressive form of earnings smoothing to maintain the stream. While some studies argue that smoothing has information value and, thus, might yield positive economic outcomes (Tucker and Zarowin, 2006; Markarian and Gill de Albornoz, 2012), others argue that smoothing is not informative and, thus, does not add value to the firm (Rountree et al., 2008; McInnis, 2010). Our results that firms suspected of fabricating the earnings stream have the rewards reduced can be interpreted as consistent with smoothing being penalized by market participants.

The remainder of the paper is organized as follows: section 2 provides a discussion of the related literature and describes the hypotheses. Section 3 contains the research design. Section 4 describes the data and the empirical results. Section 5 reports robustness tests. Finally, section 6 summarizes and concludes.

2.2 Prior Research and Development of the Hypotheses

Recent research provides evidence that market participants reward firms that meet or beat certain earnings benchmarks, such as prior year earnings (e.g. Barth et al., 1999; Francis et al., 2003; Myers et al., 2007; Koonce and Lipe, 2010), and analysts' forecasts (e.g., Kasznik and McNichols, 2002; Bartov et al., 2002; Koonce and Lipe, 2010). Regarding patterns of earnings increases, prior research shows that firms with a stream of increases in earnings enjoy higher price-earnings multiples (Barth et al. 1999), and positive abnormal returns (Myers et al., 2007). Koonce and Lipe (2010) conduct several experiments to investigate how and why investors react to these patterns, and conclude

that investors assign higher stock price to these firms because they consider a pattern of earnings increases as a signal of higher management's credibility and better future prospects. Thus, the reward accrues to the firm through a decrease in the discount rate that investors apply (the firm appears as less risky), and through an increase in investors' perception of the persistence of the firm's earnings.[1] Overall, this evidence is consistent with the results in the survey study in Graham et al. (2005) that managers seek to meet or beat earnings benchmarks to build credibility, and to inform about future growth prospects.

Among the firms that report a pattern of consecutive increases in earnings, some may achieve the pattern through intrinsic performance, while others may engage in different forms of earnings management to fabricate the stream and mislead investors. Managers can be inclined to fabricate the earnings stream because they feel that doing so the firm will receive capital market rewards. They might also feel inclined to sustain an earnings trend because firms that end a stream of positive earnings increases suffer a larger than expected market penalty (e.g. Skinner and Sloan, 2002; Kinney et al., 2002), and a larger than expected cut in managerial compensation (Matsunaga and Park, 2001).

The study that provides evidence more directly related with managers using earnings management to fabricate the earnings trend is Myers et al. (2007). In particular, they show that firms reporting patterns of increasing earnings are likely to maintain or extend the patterns through various means of earnings management, including reporting more positive or negative special items, increasing stock repurchases, and adjusting effective tax rates. While the evidence on earnings management to maintain long earnings streams is more limited, there is a long stream of literature showing the existence of

[1] Prior evidence on market rewards to firms that meet or beat analysts' forecasts is consistent with this view that rewards to benchmark beaters accrue to the firm through those two channels (Xie, 2011).

earnings management to meet or beat other benchmarks (e.g., Burgstahler and Dichev, 1997; Degeorge et al., 1999; Kasznik, 1999).

In our first strategy to identify whether the pattern of increasing earnings is genuine, we focus on cash flows. Dichev et al. (2013), in their survey of Chief Financial Officers (CFOs) show that CFOs believe that high quality earnings are those backed by cash flows. The idea that a misalignment between earnings and cash flows is indicative of earnings management is popular in the literature (i.e., Dechow and Dichev, 2002), and there is evidence that investors use cash flows to assess earnings quality (Kama and Melumad, 2012). Prior literature shows that there might be mispricing at the earnings announcement date driven by earnings management to avoid missing the earnings forecast. This mispricing is reduced once the full financial statements, including the cash flow statement, are disclosed (DeFond and Park, 2001; Baber et al., 2006). This prior evidence is consistent with information from the cash flow statement helping to detect earnings management to meet or beat targets.

Given this evidence on the usefulness of cash flows to detect misreporting, we posit that a firm with a pattern of increasing earnings is non-suspect of having engaged in earnings management to fabricate the stream of consecutive earnings increases whenever the earnings pattern comes together with the same pattern of increasing cash flows. If financial analysts use this simple signal to identify non-suspect beaters, we argue that these non-suspect beaters (with patterns of consecutive increases both in earnings and in cash flows) will enjoy higher price-earnings multiples than firms with only a pattern of increasing earnings. This leads to the first hypothesis in the paper:

> **H1:** Investors assign higher price-earnings multiples to firms with a pattern of increasing earnings that is supported by the same pattern of increasing cash flows.

Earnings management can be achieved through accounting choices and estimates about accruals, and/or through altering reported earnings by adjusting the timing and the scale of underlying real business activities to mislead market participants. Our second set of hypotheses refers to whether market participants price differently firms suspected of maintaining the stream of consecutive earnings increases through the management of accruals, and/or the management of real operational activities.

Prior research has not directly addressed whether market participants award lower rewards to firms with a pattern of increasing earnings and suspect of having fabricated the pattern through the management of accruals. There is only related evidence of whether investors penalize firms that managed accruals to meet or beat other benchmarks, and this evidence is mixed.

On the one hand, several authors argue that investors are not able to identify firms that manage accruals. The result of the inability of investors to identify firms that manage earnings through accruals to beat the targets is that these firms obtain the same rewards as those benchmark beating firms that do not manage earnings. The evidence in Gleason and Mills (2008) is consistent with this view. They find that firms that beat the targets through discretionary accruals are not penalized, and argue this is the case as discretionary accruals are hardly visible. They also find that firms that decrease the tax-expense opportunistically to meet the targets are penalized, and they argue this is the case as the tax-expense is more visible for investors than discretionary accruals.

In line with these visibility concerns, DeFond and Park (2001) and Baber et al. (2006) show that benchmark beating firms that manage earnings are not penalized at the earnings announcement date, but the rewards are substantially reduced in the coming months, once the full financial statements are known to investors. Also, Das et al. (2009) show that investors penalize benchmark beating firms if they present a substantial

change in earnings behavior in the fourth quarter with respect to the other quarters, as this is an obvious signal of earnings management. Also in line with the visibility concerns, Burgstahler and Eames (2003) show that analysts have problems to identify the firms that manage earnings to avoid small losses, but that they do a better job in identifying firms that manage accruals to avoid earnings declines. Finally, Francis et al. (2003), who look at habitual beaters of forecasts and prior year earnings, and Athanasakou et al. (2001), who look at analysts' forecasts, show that the rewards to firms that manage earnings are reduced.

On the other hand, in studies like Bartov et al. (2002) it is argued that investors do not penalize firms that meet or beat the targets (in their case, analysts' forecasts) through accruals management because investors believe these firms are bound to perform better in the future than firms that do not manage earnings and miss the targets. Chen et al. (2010) also provide evidence along these lines.

Regarding the manipulation of real operational activities to meet financial reporting goals, Roychowdhury (2006) finds empirical evidence that firms avoid reporting losses through temporal sales increases, overproduction, and the opportunistic reduction of discretionary expenses, such as R&D investment, selling, general and administrative (SGA) expenses and advertising expenses. The survey study conducted by Graham et al. (2005) shows that the majority of managers employ real activities management to meet or beat earnings benchmarks even though real activities management decreases future cash flows and firm value (Roychowdhury, 2006). While there is a long stream of literature showing that managers engage in real earnings management to beat earnings targets (e.g., Baber et al.,, 1991; Garcia Osma and Young, 2009; Gunny, 2010), the evidence on whether investors penalize benchmark beating firms that resort to real earnings management to beat the targets is more reduced, and to the best of our

knowledge there is not prior evidence on the particular case of rewards to long streams of earnings increases fabricated through real earnings management.

The studies that are more closely related to our research questions are Bhojraj et al. (2009), Gunny (2010), Chen et al. (2010), and Athanasakou et al. (2011). Bhojraj et al. (2009) show that managers resort to real earnings management practices to meet earnings forecasts and that at least in the short term there are not penalties linked to real earnings management. However, the positive stock market effects reverse over a 3 year window. Similarly, Athanasakou et al. (2011) find that firms that resort to real earnings management to meet earnings benchmarks are penalized by market participants even in the same year. In line with the evidence in Bhojraj et al. (2009) and Athanasakou et al. (2011), Cohen and Zarowin (2010) find that firms that engage in real earnings management suffer severe declines in future operating performance.

Contrary to these views, Chen et al. (2010) find that the rewards to benchmark beaters do not differ for firms that manage real activities. They argue this is so as real operations management is informative and help investors identify firms that will perform better in the future. In a related study, Gunny (2010) shows that firms that engage in real earnings management have better future performance. This provides indirect evidence consistent with Chen et al. (2010) that investors might see benchmark beating firms that resorted to inefficient operational practices to hit the target as better than firms that missed the targets. This evidence also links well with the expectations games in Stein (1989).

Given that prior studies focus on short term earnings targets, we contribute to this stream of literature analyzing whether the capital markets benefits of firms with long streams of annual increases in earnings differ for firms with signals of having engaged in earnings management to fabricate the stream. We predict that price-earnings multiples are lower for firms achieving a pattern of increasing earnings either through

accrual-based earnings management and/or through real activities management. This leads to our second set of hypotheses:

> **H2 (a):** Investors reduce price-earnings multiples to firms achieving a pattern of increasing earnings through the opportunistic use of accruals.
>
> **H2 (b):** Investors reduce price-earnings multiples to firms achieving a pattern of increasing earnings through real activities management, including accelerating sales on credit beyond whatever is advisable by common practice, overproducing and opportunistically reducing discretionary expenses.

While we expect that the capital market reward for firms with long streams of consecutive increases in earnings will be lower for those with signals of having fabricated the stream either through accruals or real earnings management, it is not clear though whether they will obtain a benefit vis-à-vis firms without a long stream of earnings increases.

2.3 Research Design

In our empirical tests, we choose a five-year pattern of increasing earnings as a cutoff based on the results in Barth et al. (1999). The basic results do not change when we use different lengths of patterns of earnings increases.

2.3.1 Estimation model

We conduct our analysis by estimating the following regression:

$$
\begin{aligned}
PRICE_{i,t} = \; & \beta_0 + \beta_1 EPS_{i,t} + \beta_2 EPS_{i,t} * DBEAT5_{i,t} \\
& + \beta_3 EPS_{i,t} * DBEAT5_{i,t} * DCFO5_{i,t} \\
& + \beta_4 EPS_{i,t} * DBEAT5_{i,t} * SUSPECT\_ACCRUAL5_{i,t} \\
& + \beta_5 EPS_{i,t} * DBEAT5_{i,t} * SUSPECT\_SALE5_{i,t} \\
& + \beta_6 EPS_{i,t} * DBEAT5_{i,t} * SUSPECT\_PROD5_{i,t} \\
& + \beta_7 EPS_{i,t} * DBEAT5_{i,t} * SUSPECT\_DIXP5_{i,t}
\end{aligned}
$$

$$+ \beta_8 EPS_{i,t} * Growth5_{,i,t} + \beta_9 EPS_{i,t} * Leverage_{i,t}$$
$$+ \beta_{10} EPS_{i,t} * Evar_{i,t} + \beta_{11} BVS_{i,t} + \varepsilon_{i,t} \quad (1)$$

Where i indexes the firm and t indexes the year. PRICE is share price at the fiscal year end (COMPUSTAT #199). EPS is income before extraordinary items, NIBE (COMPUSTAT #18), divided by number of common shares outstanding for basic EPS, (COMPUSTAT #54).

Throughout our tests and to identify firms that report a pattern of increasing earnings, we focus on income before extraordinary items, NIBE. Equation (1) includes an indicator variable $\mathrm{DBEAT5_{it}}$ that takes value 1 if firm i continuously reports increasing positive earnings for five years, and 0 otherwise. We expect that β_2 is positive, indicating that firms with a five-year pattern of increasing positive earnings have higher price-earnings multiples than other firms (Barth et al., 1999).

We refer to firms with a five-year pattern both in earnings increases and cash flows increases as non-suspect beaters. We create an indicator variable $\mathrm{DCFO5_{it}}$ that captures whether a firm reports a pattern of increasing cash flows, regardless of whether the pattern of increasing cash flows is linked to a pattern of increasing in earnings. We identify non-suspect beaters using an interaction term $\mathrm{DBEAT5_{it} * DCFO5_{it}}$ taking the value of 1 if firm i reports a five-year pattern of increases in positive earnings and in positive cash flows, and 0 otherwise. Regarding whether there are additional rewards to non-suspect beaters, we expect coefficient β_3 to be positive, implying that non-suspect beaters $(\mathrm{DBEAT5_{it} * DCFO5_{it}} = 1)$ enjoy higher price-earnings multiples than the rest of firms with a pattern of increasing earnings $(\mathrm{DBEAT5_{it} * DCFO5_{it}} = 0)$.

For the test of market rewards to firms suspected of having engaged in earnings management to achieve the earnings pattern, we expect that market participants assign

lower price-earnings multiples to suspect firms. The indicator variable $\text{SUSPECT\_ACCR5}_{i,t}$ captures whether firms would fail to achieve the pattern of increasing earnings if discretionary accruals are not included in earnings. We expect that suspect firms $(\text{DBEAT5}_{i,t} * \text{SUSPECT\_ACCR5}_{i,t} = 1)$ are penalized by market participants, leading to lower price-earnings multiples. If that is the case, we expect coefficient β_4 to be negative. $\text{SUSPECT\_SALE5}_{i,t}$ is a dummy variable indicating whether firms would fail to achieve the pattern of increasing earnings if the effect of sales manipulation is not included in earnings. We expect coefficient β_5 to be negative, implying those suspected firms $(\text{DBEAT5}_{i,t} * \text{SUSPECT\_SALE5}_{i,t} = 1)$ are penalized by market participants. We use an indicator variable $\text{SUSPECT\_PROD5}_{i,t}$ to capture whether firms would fail to sustain a five-year pattern of increasing earnings if the effect of overproduction is not included in earnings. We expect that coefficient β_6 is negative, implying that market participants reduce price-earnings multiples to those suspect firm. Finally, the indicator variable $\text{SUSPECT\_DIXP5}_{i,t}$ captures whether firms would fail to report a five-year pattern of increasing earnings if the effect of the opportunistic reduction of discretionary expenses is not included in earnings. We expect coefficient β_7 to be negative, indicating that market participants reduce price-earnings multiples to firms suspected of having engaged in discretionary expenses management to fabricate the earnings stream.

Finally, following Barth et al. (1999) we add four controls: Growth5, Leverage, Evar and BVS. Growth5 is the five-year compound growth rate of book value of equity (COMPUSTAT #60). We predict β_8 to be positive. Leverage is defined as the sum of short-term debt due within one year and long-term debt, divided by market value of equity (COMPUSTAT #34 + COMPUSTAT #9) /(COMPUSTAT #199 * COMPUSTAT #25). Evar is measured as the variance of the past five years' percentage change in

earnings $(\mathrm{NIBE}_{i,t} - \mathrm{NIBE}_{i,t-1})/\mathrm{abs}(\mathrm{NIBE}_{i,t-1})$. Leverage is a measure of financial risk and Evar is a measure of operating risk. We expect β_9 and β_{10} to be negative. BVS is book value of equity per share. Following Ohlson (1995) and Barth et al. (1999), we expect coefficient β_{11} to be positive.

2.3.2 Identifying suspect firms

We refer to firms with signals of having engaged in accrual-based earnings management or real activities management to sustain five years of consecutive earnings increases as suspect firms. We consider suspect firms those with (a) five years of consecutive earnings increases that present discretionary accruals (in any of the five years) that, if not included in the earnings of the corresponding year, would fail to report the pattern of increasing earnings, or (b) five years of consecutive earnings increases that engage in inefficient operational practices with the objective of managing earnings, and that would have broken the pattern of increasing earnings in any of the five years in the absence of those inefficient operational practices.

2.3.2.1 Identification of firms suspected of accrual-based earnings management

We use an indicator variable $\mathrm{SUSPECT\_ACCR5}_{i,t}$ taking the value of 1 if firm i's earnings without discretionary accruals are less than previous year's actual earnings during any of the five years of the stream, and 0 otherwise. We define an interaction term $\mathrm{DBEAT5}_{i,t} * \mathrm{SUSPECT\_ACCR5}_{i,t}$ that takes value 1 if earnings beaters (firms with a five-year pattern of increasing earnings) would fail to report the earnings pattern in the absence of discretionary accruals in the reported earnings, and 0 otherwise. We obtain earnings without discretionary accruals by subtracting the abnormal accruals from the reported earnings, in which abnormal accruals are the difference between actual accruals and fitted normal accruals estimated using the Jones (1991) model.

The Jones (1991) model we use to estimate the normal level of accruals is as follows:

$$\frac{TA_{i,t}}{A_{i,t-1}} = \alpha_0 + \alpha_1\left(\frac{1}{A_{i,t-1}}\right) + \alpha_2\left(\frac{\Delta SALE_{i,t}}{A_{i,t-1}}\right) + \alpha_3\left(\frac{PPE_{i,t}}{A_{i,t-1}}\right) + \varepsilon_{i,t} \quad (2)$$

where $TA_{i,t}$ (Total accruals) is measured as income before extraordinary items, NIBE, minus cash flows from operations, CFO, (COMPUSTAT #18 – #308). The variable $\Delta SALE_{i,t}$ is the change in sales revenues and $PPE_{i,t}$ is firm's gross property, plant, and equipment (COMPUSTAT #7). All variables are scaled by lagged total assets, $A_{i,t-1}$ (COMPUSTAT #6). A higher value of abnormal total accruals implies that managers are more likely to engage in income-increasing earnings management.

2.3.2.2 Identification of firms suspected of real earnings management

Firms suspected of having engaged in real activities management to achieve a five-year pattern of increasing earnings are those firms that undertake inefficient operating practices with the objective of avoiding breaking the pattern of increasing earnings. Following prior studies by Dechow et al. (1998) and Roychowdhury (2006), we consider three strategies of real activities management: accelerating sales on credit beyond whatever is advisable by common practice, producing more goods than necessary and the opportunistic reduction of discretionary expenses.

Sales manipulation

We create an indicator variable $SUSPECT\_SALE5_{i,t}$ that takes value of 1 if firm i's earnings without the influence of sales manipulation are less than previous year's actual earnings during any consecutive five years, and 0 otherwise. We use an interaction indicator $DBEAT5_{i,t} * SUSPECT\_SALE5_{i,t}$ taking value 1 if earnings beaters fail to maintain a five-year pattern of increasing earnings when the effect of sales manipulation is not included in the calculation of earnings, and 0 otherwise. We generate earnings

without the effect of sales manipulation by adding abnormal CFO to the reported earnings. The abnormal CFO is actual CFO minus the CFO that one would expect given sales.

Following Dechow et al. (1998), Roychowdhury (2006), Cohen et al. (2008), Bartov and Cohen (2009) and Cohen and Zarowin (2010), we express normal CFO from sales as a linear function of sales and the change in sales. Firms can accelerate sales to increase current earnings by offering price discounts or more lenient credit terms. The increased sales as a result of the price discounts and lenient credit terms are likely to disappear once the prices revert to the old ones. Such sales manipulation leads to higher current earnings when the sales are booked and margins are positive, however, it leads to lower current CFO given the normal sales levels (Roychowdhury, 2006). To estimate normal CFO, we run the following cross-sectional regression for each industry-year:

$$\frac{CFO_{i,t}}{A_{i,t-1}} = \alpha_0 + \alpha_1\left(\frac{1}{A_{i,t-1}}\right) + \alpha_2\left(\frac{SALE_{i,t}}{A_{i,t-1}}\right) + \alpha_3\left(\frac{\Delta SALE_{i,t}}{A_{i,t-1}}\right) + \varepsilon_{i,t} \quad (3)$$

where $\mathrm{CFO}_{\mathrm{i,t}}$ is cash flows from operation (COMPUSTAT #308). A more negative value of abnormal CFO implies that managers are more likely to engage in sales manipulation to increase earnings.

Overproduction

We construct an indicator variable $\mathrm{SUSPECT\_PROD5}_{\mathrm{i,t}}$ that equals 1 if firm i's earnings without the effect of overproduction are less than previous year's actual earnings during any of the five years, and 0 otherwise. We create an interaction term $\mathrm{DBEAT5}_{\mathrm{i,t}} * \mathrm{SUSPECT\_PROD5}_{\mathrm{i,t}}$ taking value of 1 if earnings beaters break a five-year pattern of increasing earnings when the effect of overproduction is not included in earnings, and 0 otherwise.

Overproduction takes place when managers produce more goods than needed to report lower cost of goods sold (COGS) and therefore to increase current earnings. To capture and quantify overproduction, we estimate normal production costs using the following regression (e.g., Roychowdhury, 2006; Cohen et al., 2008; Cohen and Zarowin, 2010; Chen et al., 2010; Gunny 2010; Zang, 2012):

$$\frac{PROD_{i,t}}{A_{i,t-1}} = \alpha_0 + \alpha_1\left(\frac{1}{A_{i,t-1}}\right) + \alpha_2\left(\frac{SALE_{i,t}}{A_{i,t-1}}\right) + \alpha_3\left(\frac{\Delta SALE_{i,t}}{A_{i,t-1}}\right) + \alpha_4\left(\frac{\Delta SALE_{i,t-1}}{A_{i,t-1}}\right) + \varepsilon_{i,t} \qquad (4)$$

where $PROD_{i,t}$ is production costs defined as the sum of $COGS_{i,t}$ (COMPUSTAT #44) and change in inventory (COMPUSTAT #3) during the year. The abnormal production costs are the difference between actual production costs and normal production costs. A higher value of abnormal production costs implies that managers are more likely to overproduce to increase earnings. We subtract abnormal production costs from earnings to obtain earnings without the effect of overproduction.

Discretionary expenses management (opportunistic decreases in discretionary expenses)

An indicator variable $\mathrm{SUSPECT\_DIXP5_{i,t}}$ equals 1 if firm i's earnings without the influence of opportunistic decreases in discretionary expenses are less than previous year's actual earnings during any of the five years, and 0 otherwise. We create an interaction term $\mathrm{DBEAT5_{i,t} * SUSPECT\_DIXP5_{i,t}}$ that takes value 1 if earnings beaters break a five-year pattern of increasing earnings when the effect of discretionary expenses management is not included in earnings, and 0 otherwise.

Discretionary expenses are generally expensed in the period when they are incurred; however, firms can opportunistically reduce current discretionary expenses to inflate current earnings. We estimate normal levels of discretionary expenses using the following model (e.g. Roychowdhury, 2006; Cohen et al., 2008; Cohen and Zarowin,

2010):

$$\frac{DIXP_{i,t}}{A_{i,t-1}} = \alpha_0 + \alpha_1\left(\frac{1}{A_{i,t-1}}\right) + \alpha_2\left(\frac{SALE_{i,t-1}}{A_{i,t-1}}\right) + \varepsilon_{i,t} \quad (5)$$

where $DIXP_{i,t}$ is discretionary expenses, including R&D (COMPUSTAT #46), selling, general and administrative expenses (COMPUSTAT #189) and advertising expenses (COMPUSTAT #45). The abnormal discretionary expenses are the difference between actual discretionary expenses and normal discretionary expenses estimated with equation (5). We calculate earnings without the effect of discretionary expenses management by adding abnormal discretionary expenses to the reported earnings.

2.4 Sample, Descriptive Statistics and Results

2.4.1 Sample

Our initial sample consists of all available firms on the annual industrial and research COMPUSTAT North America databases between 1990 and 2007, excluding regulated firms (SIC codes between 4400 and 4999), and banks and financial institutions (SIC codes between 6000 and 6999). We require at least fifteen observations for each industry-year to perform cross-sectional regressions to estimate normal levels of accruals and operational activities (Roychowdhury, 2006; Zang, 2012). We drop observations with missing data of income before extraordinary items and/or number of common shares outstanding are missing. A few observations of EPS take on extreme values, so we eliminate the upper and lower 1% of the EPS for each year (Burgstahler and Dichev, 1997). This finally yields a sample of 83,443 firm-year observations from 1990 to 2007. This is the starting data set we use to estimate normal levels of total accruals in equation (2), and normal levels of the three types of real activities in

equations (3), (4) and (5).[2] We employ, though, restricted subsets in our main tests.

2.4.2 Descriptive statistics

Table 1 Panel A presents the number of firms with different patterns of increasing positive earnings and cash flows from 1990 to 2007. Columns 2 and 3 in Panel A show the number of firms reporting different patterns of increasing positive earnings and different patterns of increasing positive cash flows. The number of firms with earnings patterns and cash flow patterns decreases with the length of patterns. More firms report a one-year pattern of increasing cash flows than a one-year pattern of increasing earnings. However, there are more firms reporting consecutive earnings increases than cash flow increases from a two-year pattern to a twelve-year pattern. Besides, the number of firms reporting cash flow patterns decreases more rapidly with the length of patterns than the number of firms reporting earnings patterns. This is preliminary evidence that firms mainly use earnings, but not cash flows, to signal to the market that their business follows a stable growth trend. This is in line with a survey study conducted by Graham et al. (2005, p.49), showing that Chief Financial Officers think earnings volatility matters more than cash flow volatility because "the market becomes more skeptical of underlying cash flows when earnings are volatile." Executives believe that a firm is perceived as riskier by the market when it has more volatile earnings than another firm even if these two firms have the same cash flow volatility (Graham et al., 2005). This evidence is also in line with managers using additional tools such as accruals and/or operational activities to sustain their consecutive increases in earnings. Column 4 presents the number of firms that have the same patterns of increasing positive earnings and increasing positive cash flows. The number decays at a rate higher

[2] We estimate normal levels of total accruals and operating activities cross-sectionally with at least fifteen observations for each two-digit SIC industry-year between 1990 and 2007.

than 50% with the length of patterns.

To carry out our tests on whether market participants reward differently firms in line with their means of achieving a five-year pattern of increasing earnings, we first constrain the sample to firms with at least five years of earnings history and 39,275 profit- and loss-making firm-year observations remain. We require profit-making firms for our estimation sample, and this criterion eliminates 14,129 observations of negative earnings, yielding 25,146 observations. We further require an identical sample throughout all our tests to avoid empirical results varying across estimation models, and this requirement eliminates 2,541 observations, which yields our final sample of 22,605 profit-making firm-year observations between 1995 and 2007, from which 2,088 observations correspond to firms with a five-year pattern of earnings increases.

In Panel B, we show that from the 2,088 firm-year observations with a five-year pattern of consecutive increases in earnings, we classify 368 (18%) as non-suspect. That is, 368 firm-year observations also present a five year pattern of consecutive increases in cash flows. Also, from the 2,088 firms with the stream, 396, 251, 616 and 1,015 are suspected of having fabricated the stream through accruals management, sales manipulation, overproduction, and the manipulation of discretionary expenses, respectively. In Panel C we also show the correlation matrix between the non-suspect and the four types of suspect firms. All the suspect measures are correlated, which is indicative of firms using several types of earnings management at the same time. The largest correlation (44%) corresponds to suspect firms of overproduction and of the manipulation of discretionary expenses.

[Insert Table 1]

Table 2 presents descriptive statistics based on the sample for which we report regression results. Table 2 also presents means for earnings beaters (firms with a five-year pattern of increasing earnings) and non-earnings beaters (firms without a five-year pattern of increasing earnings) separately, and t-tests for differences in means across the two subsamples. Specifically, earnings beaters have significantly higher share price, earnings, EPS and CFO than non-earnings beaters. Non-earnings beaters have significantly lower sales, total assets, market capitalization and ratio of market value of equity to book value of equity than earnings beaters.

Total accruals scaled by lagged total assets (TA/A) are similar for earnings beaters and for non-earnings beaters and not significantly different. CFO scaled by lagged total assets (CFO/A) is 0.16 for earnings beaters versus 0.12 for non-earnings beaters, and the difference is significant. The value of production costs scaled by lagged total assets (PROD/A) is 1.15 for the earnings beaters and it is significantly higher than scaled production costs for non-earnings beaters (0.99). The scaled discretionary expenses (DIXP/A) are not significantly different across the two subsamples. In addition, earnings beaters have significant higher growth in book value of equity (Growth5) and lower financial risk (Leverage) than non-earnings beaters.

[Insert Table 2]

Table 3 presents Pearson correlations between various variables. Share price (PRICE) exhibits strong positive correlation with earnings, EPS, CFO, scaled CFO, abnormal CFO (Ab_CFO/A), Growth5 and BVS, and significantly negative correlation with

scaled production costs, scaled discretionary expenses, abnormal production costs (Ab_PROD/A) and Leverage. Consistent with prior studies, earnings are positively correlated with CFO (0.93) and scaled CFO (0.03), and negatively correlated with scaled production costs, scaled discretionary expenses and Leverage. EPS is negatively correlated with abnormal production costs. As expected, the scaled CFO and scaled total accruals exhibit a strong negative correlation, with a correlation coefficient of -0.96.

The correlation between abnormal accruals (Ab_TA/A) and abnormal CFO is significantly negative (-0.11). This is probably because accrual-based earnings management and sales manipulation take place simultaneously (Roychowdhury, 2006; Zang, 2012). The correlation coefficient between abnormal production costs and abnormal discretionary expenses (Ab_DIXP/A) is significantly negative (-0.33). This is, probably, because managers engage in overproduction, leading to abnormally high production costs; meanwhile, they reduce discretionary expenses when the common goal is to report higher earnings (Roychowdhury, 2006).

[Insert Table 3]

2.4.3 Empirical results

We estimate equation (1) using standard errors clustered by firm and year to control for serial correlation and cross-sectional dependence (Petersen, 2009) for 22,605 profit-making firm-year observations from 1995 to 2007.[3] We include year and industry

[3] We also estimate equation (1) using White (1980) standard errors. Results are very similar. The t-statistics are greater if we use White (1980) standard errors rather than Petersen (2009) standard errors, but inferences do not change.

dummies to control for fixed effects.

Table 4 reports the regression-based tests of hypothesis H1 regarding whether investors assign higher price-earnings multiples to non-suspect beaters (firms with five-year patterns both in earnings increases and cash flow increases). The first Column shows baseline results of basic price-earnings multiples and other factors that theory suggests and prior empirical work has shown to have significant effects on share price. The results are consistent with our predictions regarding significantly positive coefficients on growth of book value of equity ($EPS * Growth5$) (4.993, t = 2.88) and on book value of equity per share (BVS) (1.258, t = 3.60), and significantly negative coefficients on earnings variability ($EPS * Evar$) (0, t = -1.80) and leverage ($EPS * Leverage$) (-2.481, -5.98). Column 2 shows that the coefficient on the variable $EPS * DBEAT5$ is significantly positive (2.940, t = 4.51), consistent with Barth et al. (1999) that firms with a five-year pattern of increasing earnings have higher price-earnings multiples than other firms.[4] In Column 3 the price-earnings multiple of $DBEAT5$ is 2.398 (t = 3.86) and the price-earnings multiple of the interaction term $DBEAT5 * DCFO5$ is 3.696 (t = 2.74), indicating that market participants add additional rewards to non-suspect beaters, consistent with our hypothesis H1.

[Insert Table 4]

Table 5 shows regression results of whether investors assign lower price-earnings multiples to firms that engage in several earnings management types to create the

[4] Although a five-year pattern is an arbitrary choice, untabulated tests show that market participants also assign higher price-earnings multiples to firms that have consecutive patterns of earnings increases from two years through eleven years.

earnings stream. Column 1 in Panel A shows that the coefficient on $EPS * DBEAT5$ is significantly positive (3.483, t = 4.70), meaning that market participants assign higher price-earnings multiple to firms with a string of five consecutive years of earnings increases. The coefficient on $EPS * DBEAT5 * SUSPECT\_ACCR5$ is significantly negative (-2.203, t = -2.85), indicating that market participants assign lower price-earnings ratios to suspected firms that fail to maintain the five years of consecutive increases in earnings if discretionary total accruals are not included in earnings, which is consistent with hypothesis H2 (a).[5] Column 2 shows that the coefficient on earnings beaters is 3.551 (t = 4.59) and that the interaction term $EPS * DBEAT5 * SUSPECT\_SALE5$ is significantly negative (-3.821, t = -3.46), meaning that market participants penalize suspect firms that would have broken the pattern of increasing earnings if the effect of sales manipulation on earnings were not considered, consistent with hypothesis H2 (b). Column 3 shows that market participants reward earnings beaters (3.418, t = 4.40) and the coefficient on the interaction term $EPS * DBEAT5 * SUSPECT\_PROD5$ is significantly negative (-1.584, t = 2.12), consistent with our hypothesis H2 (b) that firms that overproduce to avoid breaking the earnings trend have lower price-earnings multiples than the rest of benchmark beating firms. In Column 4 the coefficient on $EPS * DBEAT5 * SUSPECT\_DIXP5$ is insignificant (-0.325, t = -0.33), implying that market participants do not penalize firms that opportunistically reduce discretionary expenses to achieve the earnings pattern, which is inconsistent with our hypothesis H2 (b).

Given that the different sets of suspect observations are correlated with each other and this could be introducing problems of correlated omitted variables, we estimate

[5] This result also holds if we use discretionary working capital accruals.

equation (1) including all earnings management proxies at the same time. Table 5 Panel B presents regressions including all the dummy variables to identify suspect firms at the same time. Column 1 in Panel B shows that earnings beaters are rewarded (4.092, t = 4.62), and that market participants reduce price-earnings multiples to suspect firms that have managed total accruals (-2.197, t = -2.69) and sales (-3.816, t = -3.47) to increase earnings. Column 2 shows that market participants reward earnings beaters (3.864, t = 4.56), and reduce price-earnings multiples to suspect firms that use accrual-based earnings management (-2.050, t = -2.68) together with overproduction (-1.385, t = -1.82). Column 3 shows that price-earnings multiples are lower for suspect firms that employ accrual-based earnings management (-2.214, t = -3.08), but not for firms with opportunistic decreases in discretionary expenses (0.048, t = 0.05). Finally, Column 4 shows that market participants do not reduce rewards to firms suspected of overproduction (-1.008, t = -1.48) when we consider all types of earnings management. This result could be explained by the overlapping classification of different types of suspect firms.

[Insert Table 5]

We carry out an additional test to check whether the results in Table 5 Panel A do not vary when the proxy for non-suspect beaters is also included in the models. Table 6 contains regression results of market rewards on earnings beaters, non-suspect beaters and each type of suspect firms. Column 1 shows that the coefficient on $EPS * DBEAT5 * DCFO5$ is 3.567 (t = 2.61) and the coefficient on $EPS * DBEAT5 * SUSPECT\_ACCR5$ is -2.050 (t = -2.66), implying that market participants assign higher

price-earnings multiples to non-suspect beaters and lower price-earnings multiples to suspect firms that manage accruals. Column 2 reports that the coefficient on $EPS * DBEAT5 * DCFO5$ is 3.114 (t = 2.44) and the coefficient on $EPS * DBEAT5 * SUSPECT\_SALE5$ is -3.298 (t = -3.16), indicating that market participants assign additional price-earnings multiples to non-suspect beaters and reduces price-earnings multiples to suspect firms that use sales manipulation to report a pattern of increasing earnings. Column 3 shows that market participants assign higher rewards to non-suspect beaters (3.570, t = 2.66) and penalize suspect firms that overproduce to avoid breaking the earnings pattern (-1.389, t = -1.83). Column 4 shows that the coefficient on $EPS * DBEAT5 * DCFO5$ is 3.728 (t = 2.73) and the coefficient on $EPS * DBEAT5 * SUSPECT\_DIXP5$ is insignificant (-1.389, t = -1.83), indicating that market participants do not penalize suspect firms that reduce discretionary expenses opportunistically to avoid breaking the earnings trend. The regression results in Table 6 are consistent with the preceding findings in Tables 4 and 5 that market participants assign higher price-earnings multiples to non-suspect beaters and lower price-earnings multiples to suspect firms that would have broken a five-year pattern of increasing earnings if discretionary accruals, the effects of sales manipulation or the effects of overproduction were not included in the reported earnings.[6]

[Insert Table 6]

2.5 Robustness Tests

[6] We repeat the analysis excluding BVS. Our main inferences do not change.

To verify the robustness of our main findings, we repeat the tests of hypotheses H1, H2 (a) and H2 (b) using (1) a sample of 39,275 profit- and loss-making firm-year observations, and (2) a sample of 2,088 firms with a pattern of five-year earnings increases.

The results with the sample of 39,275 profit- and loss- making firm-year observations (EPS≥0 and EPS<0) are not qualitatively different from our main results. Following Francis et al. (2003), we control for the effect of loss-making firm-year observations using an indicator variable, $DLOSS_{i,t}$, taking the value of 1 if firm i's earnings in year t is less than 0, and 0 otherwise. Unreported results show that earnings beaters are rewarded throughout all model specifications and non-suspect beaters are valued higher than the rest of earnings pattern beating firms. The results also show that market participants assign lower price-earnings multiples to firms suspected of having used accrual-based earnings management, sales manipulation or overproduction to achieve a five-year pattern of increasing earnings.

Second, we repeat the test for hypotheses H1, H2(a) and H2(b) using a sample of firms meeting or beating prior year earnings for five years ($DBEAT5 = 1$), which left 2,088 firm-year observations. The results are consistent with the evidence previously reported in our main tests that non-suspect beaters have higher price-earnings multiples and that suspect firms that manage discretionary accruals, sales and production have lower price-earnings multiples than the rest of earnings pattern beating firms.

2.6 Summary and Conclusions

In this paper we analyze whether market rewards to firms with patterns of consecutive increases in earnings differ according to whether the firm is either non-

suspect or suspect of having managed earnings to fabricate the stream. As a signal that the earnings stream is genuine we look at whether the firm also reports a pattern of increases in cash flows. We classify firms with a stream of increases in both earnings and cash flows as non-suspect beaters, and find that market rewards linked to the stream of earnings increases are more pronounced for these non-suspect beaters.

We also analyze whether market participants penalize firms suspected of fabricating the earnings stream, either through accrual-based earnings management or through the manipulation of real activities. We find that market participants assign lower price-earnings multiples to firms suspected of using accrual-based earnings management to achieve a five-year pattern of increasing earnings. Our results also show that market participants penalize firms that increase credit sales beyond whatever is advisable by common practice or overproduce to reduce cost of goods sold, to achieve the pattern of increasing earning. However, market participants do not penalize firms that achieve the earnings pattern through opportunistic reductions in discretionary expenses, including R&D, advertising, and selling, general and administrative expenses.

While we expected firms that opportunistically reduce discretionary expenses to be penalized, our empirical results about the opportunistic reduction of discretionary expenses are consistent with those in Bhojraj et al. (2009) that firms that meet analysts' forecasts through real earnings management are not immediately punished in the market. Whether this result can be attributed to real earnings management being informative about improved future performance (as suggested by Gunny, 2010), to the expectation game described in Stein (1989) that will again identify firms that maintain the stream, regardless of how they do it, as enjoying a better financial situation than the rest, or to the limited attention argument discussed by Daniel et al. (2002) and Hirshleifer and Teoh (2003), or other market imperfections, is something that we do not tackle in the

present study, but that should be the object of future research. An alternative explanation for this result is that the proxy that we use to capture opportunistic decreases in discretionary expenses could be noisy and not used in practice by financial analysts.

Appendix

Variable Descriptions and Definitions

PRICE	Close price – fiscal year end (#199)
Earnings	NIBE, net income before extraordinary items (#18)
EPS	net income before extraordinary items divided by number of shares outstanding for basic EPS (#54)
DBEAT5	An indicator variable equals to 1 if a firm reports a 5-year pattern of increasing positive earnings, and 0 otherwise
CFO	Cash flow from operations (#308)
DCFO5	An indicator variable equals 1 if a firm reports a 5-year pattern of increasing cash flows, and 0 otherwise
DBEAT5*DCFO5	An interaction indicator variable equals 1 if a firm reports 5-year patterns both in earnings increases and in cash flows increases, and 0 otherwise
A	Total assets (#6)
Total Accruals	the difference between net income before extraordinary items (#18) and cash flows from operations (#308) divided by lagged total assets (#6)
PPE	Firm's gross property, plant, and equipment, COMPUSTAT #7
Ab_TA	the level of abnormal total accruals computed using the Jones Model
SUSPECT_ACCR5	An indicator variable takes value of 1 if earnings without discretionary accruals (abnormal total accruals multiplied by lagged total assets) are less than previous year's actual earnings during any of the five years, and 0 otherwise
DBEAT5*SUSPECT_ACCR5	An interaction indicator variable takes value of 1 if a firm with a five-year pattern of increasing earnings presents discretionary total accruals that, if not included in earnings, would fail to report the pattern of increasing earnings, and 0 otherwise
Sales	Net sales (#12)
Ab_CFO	the level of abnormal cash flows from operations computed using equation (3)
D_RM_SALES5	An indicator variable takes value of 1 if earnings without sales management (abnormal CFO multiplied by lagged total assets) are less than previous year's actual earnings during any of the five years, and 0 otherwise
DBEAT5*SUSPECT_SALE5	An interaction indicator variable takes value of 1 if a firm with a five-year pattern of increasing earnings fails to maintain the pattern when the influence of sales management is not included in earnings, and 0 otherwise
COG	Cost of goods sold (#41)
INVT	Inventory (#3)
PROD	Production cost = COGS (#41) + ΔINVT (#3)
Ab_PROD	the level of abnormal production costs computed using equation (4)
SUSPECT_PROD5	An indicator variable takes value of 1 if earnings without production management (abnormal production costs multiplied by total assets) are less than previous year's actual earnings during any of the five years, and 0 otherwise
DBEAT5*SUSPECT_PROD5	An interaction indicator variable takes value of 1 if a firm with a five-year pattern of increasing earnings fails

	to maintain the pattern when production management is not included in earnings, and 0 otherwise
R&D	R&D expenses (#46)
SGA	Selling, general and administrative expenses (#189)
Advertising	Advertising expenses (#45)
Discretionary Expenses	R&D (#46) + SGA (#189) + Advertising (#45)
Ab_DIXP	the level of abnormal discretionary expenses
D_RM_ADIXP5	An indicator variable takes value of 1 if earnings without the influence of expenses management (abnormal discretionary expenses multiplied by total assets) are less than previous year's actual earnings during any consecutive five years, and 0 otherwise
DBEAT5*SUSPECT_DIXP5	An interaction indicator variable takes value of 1 if a firm with a five-year pattern of increasing earnings fails to maintain the pattern when the influence of discretionary expense management is not included in earnings, and 0 otherwise
DBEAT5*SUSPECT_REV5	An interaction indicator variable equals 1 if a firm reports a five-year pattern of increasing earnings but not a five-year pattern of increasing sales, and 0 otherwise.
Leverage	The sum of short-term debt (#34) and long-term debt (#9) divided by market capitalization(#199*#25)
Evar	Variance of the past five years' percentage change in earnings $(\mathrm{NIBE}_{i,t} - \mathrm{NIBE}_{i,t-1})/\mathrm{abs}(\mathrm{NIBE}_{i,t-1})$
Growth5	Five-year compound annual growth rate of book value of equity (#60), (BVt/BVt-6)1/5-1
BVS	Book value of equity per share (#60/# 54).

All variables are in millions of dollars except number of common shares outstanding for basic EPS (#54), which units are millions.

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Table 1
Panel A: Number of Firms Reporting Patterns of Positive Earnings Increases, Positive CFO Increases and Both in Positive Earnings and Positive CFO Increases

Num. of Years	Num. of Earnings Beaters	Num. of CFO Beaters	Num. of Non-suspect Beaters (% over Earnings Beaters)
1	21995	22468	12791(0.58)
2	11369	9162	4428(0.39)
3	6292	4070	1806(0.29)
4	3601	1973	813(0.23)
5	2088	993	368(0.18)
6	1246	535	189(0.15)
7	767	291	105(0.14)
8	484	157	61(0.13)
9	313	82	33(0.11)
10	203	41	14(0.07)
11	136	19	3(0.02)
12	95	9	0(0)

Earnings = net income before extraordinary items (Compustat #18). CFO = cash flows from operations (Compustat #308).

Table 1
Panel B: Number and Percentages of Non-suspect Beaters and Suspect Firms for a five Year Stream of Consecutive Earnings Increases

Earnings Beaters	Non-suspect	Suspect (Accruals)	Suspect (Sales)	Suspect (Overprod.)	Suspect (Disc. Exp.)
2088	368 (18%)	396 (19%)	251 (12%)	616 (30%)	1015 (49%)

Table 1
Panel C: Correlation Matrix between Non-suspect Beaters and the Four Types of Suspects Firms

	Non-suspect	Suspect (accruals)	Suspect (sales)	Suspect (overprod.)
Suspect (accruals)	0.13 **			
Suspect (sales)	0.01	0.12 **		
Suspect (overprod.)	0.13 **	0.26 **	0.28 **	
Suspect (disc. expenses)	0.25 **	0.39 **	0.19 **	0.44 **

** Significant at the 5% level.

Table 2
Descriptive Statistics of Key Variables

Full Sample, 1995-2007 (n = 22,605)				Earnings Beaters (n = 2,088)	Non-earnings Beaters (n = 20,517)	t-statistic
Variable	**Mean**	**Median**	**Std. Dev.**	**Mean**	**Mean**	**(Diff. in Mean)**
PRICE	19.072	14.20	22.56	27.50	18.22	18.05***
Earnings	214.74	19.23	981.01	480.58	187.69	13.05***
EPS	1.04	0.74	1.10	1.46	0.99	18.69***
CFO	368.42	30.94	1622.97	720.10	332.51	10.42***
Total Accruals	-153.78	-9.11	793.16	-236.69	-145.31	-5.00***
Sales	3259.81	390.58	12921.84	6582.32	2921.68	12.37***
Total Assets	3440.72	349.77	17648.40	7291.31	3048.86	10.24***
Market Capitalization	4517.63	393.84	19808.96	11384.65	3816.87	16.73***
Market to Book	3.17	2.08	12.94	4.42	3.04	4.65***
TA/A	-0.03	-0.04	0.27	-0.03	-0.03	0.44
CFO/A	0.12	0.11	0.27	0.16	0.12	7.62***
PROD/A	1.01	0.80	0.96	1.15	0.99	6.87***
DIXP/A	0.35	0.28	0.32	0.35	0.35	1.04
Ab_TA/A	0.08	0.05	0.21	0.06	0.08	-4.27***
Ab_CFO/A	0.12	0.09	0.18	0.14	0.12	4.63***
Ab_PROD/A	0.03	-0.06	0.62	-0.03	0.04	-4.94***
Ab_DISEXP/A	-0.13	-0.10	0.30	-0.16	-0.13	-4.34***
Leverage	0.39	0.15	1.07	0.17	0.41	-9.83***
Evar	945.35	1.54	32101.12	10.21	1040.52	-1.397
Ggrowth5	0.17	0.13	0.24	0.27	0.16	21.50***
BVS	8.43	6.47	8.85	8.13	8.09	0.20

Number of observations: 22,605 firm-year observations during 1995-2007. */**/*** indicate Significance at the 10%/5% /1% .
PRICE = close price per share at the fiscal year end (Compustat #199). Earnings = net income before extraordinary items (Compustat #18). EPS = net income before extraordinary items divided by number of shares outstanding for basic EPS (Compustat #54). CFO = cash flows from operations (Compustat #308). Total Accruals = the difference between net income before extraordinary items and cash flows from operations. Sales = net sales (Compustat #12). Total Assets = Compustat #6). Market capitalization = close price per share times the number of common shares outstanding (Compustat #25). Market to Book = the market capitalization divided by the book value of common equity (Compustat

Table 2 (continued)

#60). TA/A = total accruals divided by lagged total assets. CFO/A = cash flows from operations divided by lagged total assets. PROD/A = Production costs divided by lagged total assets, where production costs are defined as the sum of cost of goods sold (Compustat #41) and the change in inventories (Compustat #3). DIXP/A = Discretionary expenses divided by lagged total assets, where discretionary expenses are the sum of R&D expenses (Compustat #46), advertising expenses (Compustat #45) and SGA expenses (Compustat #189). Ab_TA/A = the discretionary total accruals computed using the Jones Model. Ab_CFO/A = the level of abnormal cash flows from operations computed using equation (3). Ab_PROD/A = the level of abnormal production costs computed using equation (4). Ab_DIXP/A = the level of abnormal discretionary expenses computed using equation (5). Leverage = sum of short-term debt (Compustat #34) and long-term debt (Compustat #9) divided by market capitalization. Evar = variance of the past 5 years' percentage change in earnings. Growth5= 5-year compound growth rate of book value of equity. BVS = book value of equity per share.

Table 3
Correlation Matrix among Key Variables

	Firm characteristics								Earnings management proxies				Controls		
	PRICE	Earnings	EPS	CFO	TA/A	CFO/A	PROD/A	DIXP/A	Ab_TA/A	Ab_CFO/A	Ab_PROD/A	Ab_DIXP/A	Leverage	Evar	Growth5
Earnings	0.21**	1													
EPS	0.62**	0.27**	1												
CFO	0.20**	0.93**	0.23**	1											
TA/A	-0.02	-0.01	0.01	-0.03**	1										
CFO/A	0.04**	0.03**	0.05**	0.03**	-0.96**	1									
PROD/A	-0.08**	-0.06**	0.01	-0.07**	0.03**	-0.02	1								
DIXP/A	-0.08**	-0.06**	-0.16**	-0.08**	0.02	0.04**	0.13	1							
Ab_TA/A	-0.02	-0.01	-0.02	-0.02**	-0.27**	-0.18**	-0.03**	0.05**	1						
Ab_CFO/A	0.06**	0.07**	-0.02	0.07**	-0.13**	0.20**	-0.27**	0.07**	-0.11**	1					
Ab_PROD/A	-0.09**	-0.06**	-0.03**	-0.07**	0.02	-0.03**	0.71**	-0.01	0.03**	-0.25**	1				
Ab_DIXP/A	-0.01	-0.01	-0.01	-0.02	-0.04**	0.05**	-0.16**	0.48	0.03**	-0.26**	-0.33**	1			
Leverage	-0.10**	-0.03**	-0.03**	0.01	0.01	-0.06**	0.05**	-0.11**	-0.01	-0.12**	0.02	-0.00	1		
Evar	-0.01	-0.01	-0.01	-0.01	0.01	-0.01	0.01	0.00	0.00	-0.02	0.01	0.01	-0.00	1	
Growth5	0.10**	0.01	0.03**	-0.00	-0.00	0.04**	-0.02	-0.03**	-0.01	0.10**	-0.09**	-0.03**	-0.09**	0.11	1
BVS	0.69**	0.09**	0.60**	0.11**	-0.01	-0.03**	-0.03**	-0.20**	-0.04**	-0.09**	-0.06**	-0.02	0.01	-0.01	0.05**

Number of observations: 22,605 firm-year observations during 1995-2007. ** represents the correlation coefficients are significant at the 5% level.
PRICE = close price per share at the fiscal year end (Compustat #199). Earnings = net income before extraordinary items (Compustat #18). EPS = net income before extraordinary items divided by number of shares outstanding for basic EPS (Compustat #54). CFO = cash flows from operations (Compustat #308). TA/A = total accruals divided by lagged total assets. CFO/A = cash flows from operations divided by lagged total assets. PROD/A = Production costs divided by lagged total assets, where production costs are defined as the sum of cost of goods sold (Compustat #41) and the change in inventories (Compustat #3). DIXP/A = Discretionary expenses divided by lagged total assets, where discretionary expenses are the sum of R&D expenses (Compustat #46), advertising expenses (Compustat # 45) and SGA expenses (Compustat #189). Ab_TA/A = the discretionary total accruals computed using the Jones Model. Ab_CFO/A = the level of abnormal cash flows from operations computed using equation (3). Ab_PROD/A = the level of abnormal production costs computed using equation (4), where production costs are defined as the sum of cost of goods sold (Compustat #41) and the change in inventories (Compustat #3). Ab_DIXP/A = the level of abnormal discretionary expenses, where discretionary expenses are the sum of R&D expenses (Compustat #46), advertising expenses (Compustat #45) and SGA expenses (Compustat #189) . Leverage = sum of short-term debt (Compustat # 34) and long-term debt (Compustat # 9) divided by market capitalization. Evar = variance of the past 5 years' percentage change in earnings. Growth5 = 5-year compound growth rate of book value of equity. BVS = book value of equity per share.

Table 4
Analysis of Market Rewards to Non-suspect Beaters (Firms with Five-year Patterns of Increasing Earnings and Increasing Cash Flows)

N=22,605		*1*	*2*	*3*
Variable	*Predicted Sign*	*Coef. (t-statistic)*	*Coef. (t-statistic)*	*Coef. (t-statistic)*
Intercept	**?**	1.061	1.057	1.047
		(0.99)	(0.97)	(0.96)
EPS	+	6.228***	5.749**	5.756**
		(3.73)	(3.37)	(3.37)
EPS*DBEAT5	+		2.940***	2.398***
			(4.51)	(3.86)
EPS*DBEAT5*DCFO5	+			3.696**
				(2.74)
EPS*Growth5	+	4.993***	4.792**	4.741**
		(2.88)	(2.46)	(2.40)
EPS*Leverage	-	-2.481***	-2.389***	-2.382***
		(-5.98)	(-5.80)	(-5.80)
EPS*Evar	-	-0.000*	-0.000	-0.000
		(-1.80)	(-1.59)	(-1.58)
BVS	+	1.258***	1.279***	1.280***
		(3.60)	(3.65)	(3.65)
R-Squared		0.574	0.579	0.580

Year and industry dummies are included in all models. t-statistic in parentheses are based on firm and year clustered standard errors. */**/*** indicate significance at 10%/5%/1% (two-tailed).
PRICE = close price per share at the fiscal year end (Compustat #199). EPS = net income before extraordinary items divided by number of shares outstanding for basic EPS (Compustat #54). DBEAT5 = indicator variable equals 1 if a firm reports a 5-year pattern of increasing positive earnings, and 0 otherwise. DCFO5 = indicator variable equals 1 if a firm reports a 5-year pattern of increasing positive cash flows, and 0 otherwise. DBEAT5*DCFO5 = interaction indicator variable equals 1 if a firm reports five-year patterns both in earnings increases and in cash flows increases, and 0 otherwise. Leverage = sum of short-term debt (Compustat # 34) and long-term debt (Compustat # 9) divided by market capitalization. Evar = variance of the past 5 years' percentage change in earnings. Growth5 = 5-year compound growth rate of book value of equity. BVS = book value of equity per share.

Table 5
Analysis of Market Rewards to Suspect Firms

Panel A: Having Used Each Type of Earnings Management to Achieve the Earnings Pattern

N=22,605		*1*	*2*	*3*	*4*
Variable	*Predicted Sign*	*Coef. (t-statistic)*	*Coef. (t-statistic)*	*Coef. (t-statistic)*	*Coef. (t-statistic)*
Intercept	**?**	1.024	1.034	1.051	1.059
		(0.94)	(0.94)	(0.96)	(0.97)
EPS	+	5.751***	5.736***	5.757***	5.748***
		(3.37)	(3.36)	(3.37)	(3.36)
EPS*DBEAT5	+	3.483***	3.551***	3.418***	3.088***
		(4.70)	(4.59)	(4.40)	(3.27)
EPS*DBEAT5*SUSPECT_ACCR5	-	-2.203***			
		(-2.85)			
EPS*DBEAT5*SUSPECT_SALE5	-		-3.821***		
			(-3.46)		
EPS*DBEAT5*SUSPECT_PROD5	-			-1.584**	
				(-2.12)	
EPS*DBEAT5*SUSPECT_DIXP5	-				-0.325
					(-0.33)
EPS*Growth5	+	4.787**	4.801**	4.756**	4.785**
		(2.45)	(2.48)	(2.42)	(2.46)
EPS*Leverage	-	-2.377***	-2.369***	-2.392***	-2.389***
		(-5.78)	(-5.84)	(-5.82)	(-5.80)
EPS*Evar	-	-0.000	-0.000	-0.000	-0.000
		(-1.58)	(-1.58)	(-1.59)	(-1.59)
BVS	+	1.279***	1.282***	1.279***	1.279***
		(3.65)	(3.66)	(3.65)	(3.65)
R-Squared		0.579	0.580	0.579	0.579

Table 5 (continued)

Panel B: Having Used Multiple Types of Earnings Management to Achieve the Earnings Pattern

N=22,605		*1*	*2*	*3*	*4*
Variable	*Predicted Sign*	*Coef. (t-statistic)*	*Coef. (t-statistic)*	*Coef. (t-statistic)*	*Coef. (t-statistic)*
Intercept	**?**	1.001	1.021	1.023	1.003
		(0.91)	(0.93)	(0.94)	(0.91)
EPS	+	5.738***	5.758***	5.751***	5.742***
		(3.36)	(3.37)	(3.37)	(3.36)
EPS*DBEAT5	+	4.092***	3.864***	3.464***	4.491***
		(4.62)	(4.56)	(3.54)	(3.43)
EPS*DBEAT5*SUSPECT_ACCR5	-	-2.197***	-2.050***	-2.214***	-2.011**
		(-2.69)	(-2.68)	(-3.08)	(-2.73)
EPS*DBEAT5*SUSPECT_SALE5	-	-3.816***			-3.750***
		(-3.47)			(-2.98)
EPS*DBEAT5*SUSPECT_PROD5	-		-1.385*		-1.008
			(-1.82)		(-1.48)
EPS*DBEAT5*SUSPECT_DIXP5	-			0.048	-0.330
				(0.05)	(-0.32)
EPS*Growth5	+	4.796**	4.756**	4.788**	4.6766**
		(2.47)	(2.42)	(2.46)	(2.45)
EPS*Leverage	-	-2.358***	-2.381***	-2.378***	-2.361***
		(-5.81)	(-5.79)	(-5.79)	(-5.82)
EPS*Evar	-	-0.000	-0.000	-0.000	-0.000
		(-1.57)	(-1.57)	(-1.58)	(-1.57)
BVS	+	1.281***	1.279***	1.279***	1.282***
		(3.66)	(3.65)	(3.65)	(3.66)
R-Squared		0.580	0.580	0.579	0.581

Year and industry dummies are included in all models. t-statistic in parentheses are based on firm and year clustered standard errors. */**/*** indicate significance at 10%/5%/1% (two-tailed).

PRICE = close price per share at the fiscal year end (Compustat #199). EPS = net income before extraordinary items divided by number of shares outstanding for basic EPS (Compustat #54). DBEAT5 = indicator variable equals 1 if a firm reports a 5-year pattern of increasing positive earnings, and 0 otherwise. SUSPECT_ACCR5 = indicator variable equals 1 if earnings without the influence of abnormal total accruals are less than previous year's actual earnings during any consecutive five years, and 0 otherwise. DBEAT5*SUSPECT_ACCR5 = interaction indicator variable equals 1 if a firm with a five-year pattern of increasing earnings presents abnormal total accruals that, if not included in earnings, would fail to report the pattern of increasing earnings, and 0 otherwise. SUSPECT_SALE5 = indicator variable equals 1 if earnings without the influence of sales management are less than previous year's actual earnings during any consecutive five years, and 0 otherwise. DBEAT5*SUSPECT_SALE5 = interaction indicator variable equals 1 if a firm with a five-year pattern of increasing earnings fails to maintain the pattern when the influence of sales management is removed from earnings, and 0 otherwise. SUSPECT_PROD5 = indicator variable equals 1 if earnings without the influence of production management are less than previous year's actual earnings during any consecutive five years, and 0 otherwise. DBEAT5*SUSPECT_PROD5 = interaction indicator variable equals 1 if a firm with a five-year pattern of increasing earnings fails to maintain the pattern when the influence of production management is removed from earnings, and 0 otherwise. SUSPECT_DIXP5 = indicator variable equals 1 if earnings without the influence of expenses management are less than previous year's actual earnings during any consecutive five years, and 0 otherwise. DBEAT5*SUSPECT_DIXP5 = interaction indicator variable equals 1 if a firm with a five-year pattern of increasing earnings fails to maintain the pattern when the influence of discretionary expense management is removed from earnings, and 0 otherwise. Leverage = sum of short-term debt (Compustat #34) and long-term debt (Compustat #9) divided by market capitalization. Evar = variance of the past 5 years' percentage change in earnings. Growth5 = 5-year compound growth rate of book value of equity. BVS = book value of equity per share.

Table 6
Analysis of Market Rewards to Non-Suspect Beaters and Suspect Firms

N=22,605		*1*	*2*	*3*	*4*
Variable	*Predicted Sign*	*Coef. (t-statistic)*	*Coef. (t-statistic)*	*Coef. (t-statistic)*	*Coef. (t-statistic)*
Intercept	**?**	1.018	1.029	1.043	1.050
		(0.93)	(0.94)	(0.95)	(0.96)
EPS	+	5.757***	5.744***	5.763***	5.755***
		(3.37)	(3.36)	(3.37)	(3.37)
EPS*DBEAT5	+	2.923**	3.011***	2.836***	2.601***
		(4.03)	(4.12)	(3.77)	(2.85)
EPS*DBEAT5*DCFO5	+	3.567***	3.114**	3.570**	3.728**
		(2.61)	(2.44)	(2.66)	(2.73)
EPS*DBEAT5*SUSPECT_ACCR5	-	-2.050***			
		(-2.66)			
EPS*DBEAT5*SUSPECT_SALE5	-		-3.298***		
			(-3.16)		
EPS*DBEAT5*SUSPECT_PROD5	-			-1.389*	
				(-1.83)	
EPS*DBEAT5*SUSPECT_DIXP5	-				-0.455
					(-0.45)
EPS*Growth5	+	4.738**	4.757**	4.711**	4.731**
		(2.40)	(2.43)	(2.37)	(2.40)
EPS*Leverage	-	-2.371***	-2.366***	-2.385***	-2.381***
		(-5.78)	(-5.84)	(-5.81)	(-5.80)
EPS*Evar	-	-0.000	-0.000	-0.000	-0.00
		(-1.57)	(-1.57)	(-1.58)	(-1.58)
BVS	+	1.280***	1.282***	1.280***	1.280***
		(3.65)	(3.66)	(3.65)	(3.65)
R-Squared		0.580	0.580	0.580	0.580

Year and industry dummies are included in all models. t-statistic in parentheses are based on firm and year clustered standard errors. */**/*** indicate significance at 10%/5%/1% (two-tailed).

PRICE = close price per share at the fiscal year end (Compustat #199). EPS = net income before extraordinary items divided by number of shares outstanding for basic EPS (Compustat #54). DBEAT5 = indicator variable equals 1 if a firm reports a 5-year pattern of increasing positive earnings, and 0 otherwise. DCFO5 = indicator variable equals 1 if a firm reports a 5-year pattern of increasing positive cash flows, and 0 otherwise. DBEAT5*DCFO5 = interaction indicator variable equals 1 if a firm reports five-year patterns both in earnings increases and in cash flows increases, and 0 otherwise. SUSPECT_ACCR5 = indicator variable equals 1 if earnings without the influence of abnormal total accruals are less than previous year's actual earnings during any consecutive five years, and 0 otherwise. DBEAT5*SUSPECT_ACCR5 = interaction indicator variable equals 1 if a firm with a five-year pattern of increasing earnings presents abnormal total accruals that, if not included in earnings, would fail to report the pattern of increasing earnings, and 0 otherwise. SUSPECT_SALE5 = indicator variable equals 1 if earnings without the influence of sales management are less than previous year's actual earnings during any consecutive five years, and 0 otherwise. DBEAT5*SUSPECT_SALE5= interaction indicator variable equals 1 if a firm with a five-year pattern of increasing earnings fails to maintain the pattern when the influence of sales management is removed from earnings, and 0 otherwise. SUSPECT_PROD5 = indicator variable equals 1 if earnings without the influence of production management are less than previous year's actual earnings during any consecutive five years, and 0 otherwise. DBEAT5*SUSPECT_PROD5 = interaction indicator variable equals 1 if a firm with a five-year pattern of increasing earnings fails to maintain the pattern when the influence of production management is removed from earnings, and 0 otherwise. SUSPECT_DIXP5 = indicator variable equals 1 if earnings without the influence of expenses management are less than previous year's actual earnings during any consecutive five years, and 0 otherwise. DBEAT5*SUSPECT_DIXP5 = interaction indicator variable equals 1 if a firm with a five-year pattern of increasing earnings fails to maintain the pattern when the influence of discretionary expense management is removed from earnings, and 0 otherwise.

Leverage = sum of short-term debt (Compustat #34) and long-term debt (Compustat #9) divided by market capitalization. Evar = variance of the past 5 years' percentage change in earnings. Growth5 = 5-year compound growth rate of book value of equity. BVS = book value of equity per shares.

Chapter 3. The Effects of Conditional Conservatism on Market Rewards to Patterns of Increasing Earnings

Abstract

This study explores the effects of conditional conservatism on market rewards to firms that report a sequential pattern of increasing positive earnings. We expect conditional conservatism to increase the credibility of earnings increases. This is so as conservatism introduces constraints to opportunistic income-increasing earnings management (Watts, 2003a; Guay and Verrechia, 2006; Chen et al. 2007; LaFond and Watts, 2008). Using several measures of conditional conservatism, we show that market participants assign higher price-earnings multiples to firms with long streams of earnings increases when their accounting is more conditionally conservative. Our results hold after controlling for industry, year, growth opportunities, market-to-book, and firm's financial and operating risks.

3.1 Introduction

We empirically test whether conditional conservatism affects market rewards to firms that report long streams of consecutive increases in earnings. The prediction is that market rewards are higher for firms that exhibit a higher degree of conditional conservatism. Conditional conservatism is defined as the requirement of a lower degree of verification for the recognition of losses than for the recognition of gains in the financial statements, resulting in earnings reflecting bad news timelier than good news (Basu, 1997; Watts, 2003a).[7] Our study builds on the argument that conservative accounting serve as a governance control structure to curb managerial manipulation on earnings reporting (Watts, 2003a, Guay and Verrechia, 2006; LaFond and Watts, 2008). Recent literature provides analytical and empirical evidence consistent with conservatism reducing opportunistic biases in financial accounting (Chen et al., 2007; García Lara et al., 2012; Gao, 2013).

Prior studies show that market participants assign higher rewards to firms that report a long stream of increasing earnings (e.g., Barth et al., 1999) and that managers engage in earnings management to maintain and extend the earnings trend (see e.g., Myers et al., 2007). Managers do so because of the large capital market penalties linked to missing an earnings benchmark (e.g., Skinner and Sloan, 2002), which also have a large effect on managerial compensation (e.g., Matsunaga and Park, 2001).

In this paper, we study the extent to which conditional conservatism influences market rewards to firms that report a long stream of increasing earnings. We argue that conservative accounting improves the credibility of the stream of increasing earnings. This is so as conservatism introduces limits to income-increasing earnings management

[7] We use the terms conditional conservatism and conservatism interchangeably throughout the paper.

(Watts, 2003a; Chen et al., 2007; García Lara et al., 2012; Gao, 2013). Therefore, we expect that market participants assign higher prices to firms with a long pattern of increasing earnings when the accounting of these firms is more conservative.

Following the definition of conservatism proposed in Basu (1997), we employ the following firm-year specific measures of conditional conservatism: (1) the skewness of earnings deflated by the skewness of cash flows, (2) accumulated nonoperating accruals deflated by accumulated total assets, and (3) two firm-specific measures, CScores, based on the work of Khan and Watts (2009).

Using a sample of US listed non-financial, non-utility and profit-making firm-year observations for the period 1995-2007 obtained from COMPUSTAT, our findings show that market participants assign higher price-earnings multiples to firms with a five-year pattern of earnings increases when their accounting is more conditionally conservative. The result holds after controlling for growth opportunities, firm's financial and operating risks, market-to-book, and leverage, which are potentially correlated with proxies for conditional conservatism, and with firm's stock price. In addition, we also control for industry and year.

This study contributes to the literature along several dimensions. First, we connect conservative accounting with a stream of research regarding market rewards to reporting stream of consecutive earnings increases. We are not aware of any paper that directly analyzes whether market rewards to firms with a long stream of increasing earnings differ with signals of whether the firms' accounting is conditionally conservative. Our results are consistent with conservatism being a signal that investors can use to gauge whether the earnings stream is genuine or fabricated. Second, this study contributes to a stream of empirical research in accounting conservatism that shows conditional conservatism can lead to positive economic outcomes (LaFond and

Watts, 2008; García Lara et al., 2011). Finally, we provide indirect evidence that conditional conservatism improves the information environment of the firm by offsetting income-increasing earnings management in financial reporting (Chen, 2007; García Lara et al., 2012; Gao, 2013). We thus provide evidence that conservatism is not only useful in debt-contracting, but also relevant for equity holders.

The remainder of the paper is organized as follows: Section 2 provides a discussion of the related literature and describes the hypothesis. Section 3 contains the research design. Section 4 describes the data and the empirical results. Finally, Section 5 summarizes the findings and concludes.

3.2 Prior Research and Development of the Hypothesis

Recent studies highlight that conservative accounting benefits users of the accounting reports of firms. Under the contracting explanation, conservatism appears to mitigate managerial opportunistic behavior by managers (Watts, 2003a; Guay and Verreccchia, 2006; Chen et al., 2007; LaFond and Watts, 2008), and information asymmetries among the contracting parties (LaFond and Watts, 2008; Khan and Watts, 2009). Basu (1997, p.4) empirically interprets conditional conservatism as “capturing accountants’ tendency to require a higher degree of verification for recognizing good news than bad news in financial statements”. It is more difficult to manipulate earnings since the asymmetric verification requirement of good news and bad news defers the recognition of gains, and on average understates current and cumulative earnings, and assets (Watts, 2003a). Chen et al. (2007) and Gao (2013) analytically demonstrate that conservatism imposes limits to managers’ opportunistic behavior. They argue this is so as conservatism dampens firm insiders’ incentives to manage earnings. García Lara et

al. (2012) study empirically the association of conservatism and earnings management and provide evidence that conservatism imposes limits to accrual-based earnings management. Building on the argument that conservatism is part of a firm's corporate control mechanism, recent studies show that conservative accounting constrains over-investment by opportunistic managers (García Lara et al., 2010), and more conservative firms tend to make more profitable acquisition decisions (Francis and Martin, 2010).

LaFond and Watts (2008) argue that conservatism reduces the discount that investors apply to firm value when there is information asymmetry between managers and outside investors. Khan and Watts (2009) use event studies to show that conservatism is a response to increases in information asymmetry. Conservatism enables investors to verify the precision of earnings information provided by managers.

Prior research argues that the conflict of interest between firms, insiders and outsiders induces management incentives to misrepresent the firm's performance through earnings management (Leuz et al., 2003). With the extended importance of stock-based bonus plans, managers become more sensitive to the level of their firms' stock prices and their relation to key accounting numbers, such as earnings; hence, their incentives to manage earnings have also increased. Managers can be inclined to fabricate a stream of increasing earnings because they feel that doing so the firm will receive capital market rewards. They might also feel inclined to sustain a long earnings trend since firms that end a stream of positive earnings increases suffer a larger than expected market penalty (e.g., Skinner and Sloan, 2002; Kinney et al., 2002), a larger than expected cut in managerial compensation (Matsunaga and Park, 2001).

Shading light on the role of conditional conservatism in improving the functioning of capital markets, Guay and Verrecchia (2007) and Suijs (2008) analytically show that conditional conservatism can affect firm's market value and its cost of capital. Li (2010)

and García Lara et al. (2011) show that more conditional conservatism leads to lower cost of capital. Li (2010) examines the association between conditional conservatism and cost of capital at the country level and demonstrates that firms domiciled in countries with more conservative financial systems have lower cost of equity and cost of debt.

Prior research has not directly addressed whether market participants award higher rewards to firms reporting a long stream of earnings increases when the accounting of these firms is more conditionally conservative. Recent studies provide evidence that firms that report a long stream of increasing earnings enjoy higher price-earnings multiples (Barth et al., 1999) and positive abnormal returns (Myers et al., 2007). Given that prior studies find a positive association between conservatism and information environment, and a negative association between conservatism and earnings management, we contribute to prior literature by analyzing whether the capital markets benefits of firms with a long stream of annual are more pronounced for more conservative firms.

Given the evidence that conservatism constrains earnings management and improves the information environment, investors can use the level of conditional conservatism as an indirect way to assess whether the firm is suspected of having fabricated the earnings pattern. If this is the case, and firms with more conservative accounting will find it more costly to manage earnings to fabricate the earnings stream, then conservative accounting can be used as a signal that there is a lower probability that the earnings stream is fabricated. Given this, our first hypothesis is as follows:

> **H:** Market participants assign higher price-earnings multiples to firms with a long stream of earnings increases and more conditional conservatism, vis-à-vis firms that report the stream but with lower conditional conservatism.

3.3 Research Design

In our empirical tests, we choose a five-year pattern of increasing earnings as a cut off based on the results in Barth et al. (1999). The basic results of market rewards to earnings increases do not change when we use different lengths of patterns of earnings increases.

3.3.1 Model specification

We conduct our analysis by estimating the following linear regression model:

$$\begin{aligned} PRICE_{i,t} = \; & \beta_0 + \beta_1 EPS_{i,t} + \beta_2 EPS_{i,t} * DBEAT5_{i,t} \\ & + \beta_3 EPS_{i,t} * DBEAT5_{i,t} * CONSERVATISM_{i,t} \\ & + \beta_4 EPS_{i,t} * Growth5_{,i,t} + \beta_5 EPS_{i,t} * Leverage_{i,t} \\ & + \beta_6 EPS_{i,t} * Evar_{i,t} + \beta_7 BVS_{i,t} + \varepsilon_{i,t} \end{aligned} \quad (1)$$

Where *i* indexes the firm and *t* indexes the year. $PRICE$ is the share price at the fiscal year end (COMPUSTAT #199). *EPS* is income before extraordinary items, NIBE (COMPUSTAT #18), divided by number of common shares outstanding for basic *EPS*, (COMPUSTAT #54).

Throughout our tests, to identify firms that report a pattern of increasing earnings, we focus on income before extraordinary items, NIBE. Equation (1) includes a dummy variable $DBEAT5_{it}$ that takes value 1 if firm i continuously reports increasing positive earnings for five years and 0 otherwise. We refer to firms with a five-year pattern of increasing earnings as earnings beaters. We expect that β_2 is positive, indicating that firms with a five-year pattern of increasing positive earnings have higher price-earnings multiples than other firms (Barth et al., 1999).

For the main test of whether there are additional market rewards to firms that use conservative accounting on the reporting of a five-year pattern of positive increasing earnings, we expect coefficient β_3 to be positive.

Finally, following Barth et al. (1999) we add four controls: Growth5, Leverage, *Evar* and book value of equity per share (BVS). *Growth*5 is the five-year compound growth rate of book value of equity (COMPUSTAT #60). We predict β_4 to be positive. Leverage is defined as sum of short-term debt due within one year and long-term debt, divided by market value of equity (COMPUSTAT #34 + COMPUSTAT #9) /(COMPUSTAT #199 * COMPUSTAT #25). *Evar* is measured as variance of the past five years' percentage change in earnings, $(\mathrm{NIBE}_{i,t} - \mathrm{NIBE}_{i,t-1})/\mathrm{abs}\,(\mathrm{NIBE}_{i,t-1})$. Leverage is a measure of financial risk and *Evar* is a measure of operating risk. We expect β_5 and β_6 to be negative. BVS is book value of equity divided by number of shares. Following Ohlson (1995) and Barth et al. (1999), we expect coefficient β_7 to be positive.

3.3.2 Measures of conditional conservatism

This paper analyzes the incremental pricing effects of conditional conservatism on the reporting of earnings increase over consecutive five years. Following Basu's (1997) empirical definition of conditional conservatism, asymmetric recognition of gains and losses on reported earnings, we employ the following four measures of conditional conservatism.

3.3.2.1 Conditional conservatism based on Givoly and Hayn (2000)

The skewness of earnings

Relying on the notion that asymmetric timeliness of good news and bad news in earnings generally reduces the cumulative earnings relative to operating cash flows over time, we use the negative of the skewness of earnings as a measure of conditional conservatism.

Following Givoly and Hayn (2000), we develop the measure, *Con_Earskew*, by

deflating the skewness of earnings (COMPUSTAT #18) by the skewness of cash flows (COMPUSTAT #308), in order to control for the variation in firm performance (Zhang, 2008). The measure is computed in a rolling five-year window to capture the association of conditional conservatism with a five-year pattern of increasing earnings of individual firms. We multiply skewness of earnings by negative one, so that the higher the *Con_Earskew*, the more conservative the firm is.

Accumulated nonoperating accruals

The asymmetric recognition of gains and losses over extended periods can generate an accumulation of negative accruals, and this is in contrast with the expected pattern of accrual reversals (Ahmed et al., 2002). This suggests that a firm's cumulative accruals accumulated over a period provides a measure for conditional conservatism (Givoly and Hayn, 2000; Ahmed et al., 2002; Watts, 2003b). In particular, we use accumulated nonoperating accruals deflated by accumulated total assets over five years, *Con_Nonaccr*, as the second measure of conditional conservatism. We also multiply this measure by negative one, so that the higher the *Con_Nonaccr*, the more conservative the firm is.

Following Givoly and Hayn (2000) and Zhang (2008), nonoperating accruals are defined as the difference between total accruals (excluding depreciation) and operating accruals. Total accruals = net income (COMPUSTAT #172) + depreciation (COMPUSTAT #14) – cash flows from operations (COMPUSTAT #308). Operating accruals = Δ accounts receivable (COMPUSTAT #2) –Δinventories (COMPUSTAT #3) + Δ prepaid expenses (COMPUSTAT #160) –Δ accounts payable (COMPUSTAT #70) –Δ taxes payable (COMPUSTAT #71).

Prior literature identifies certain limitations of these two measures of conditional

conservatism based on the distribution of earnings and on the accumulation of accruals. One limitation is that these measures probably capture overall conservatism, beyond the scope of conditional conservatism (Ryan, 2006). Another limitation is that these measures also capture "big baths" that result from earnings management (Zhang, 2008). Therefore, we use additional measures of conditional conservatism to supplement the analysis.

3.3.2.2 Conditional Conservatism based on Khan and Watts (2009)

We construct empirical measures of the three-year average of the firm-year specific proxy for conditional conservatism proposed by Khan and Watts (2009). The Khan and Watts proxy is based on the asymmetric earnings timeliness coefficient estimates from Basu's (1997) cross-sectional regressions. Khan and Watts (2009) specify the coefficient of conservatism as a linear function of three firm characteristics that are widely viewed as determinants of conservatism at the firm level: leverage, size and market to book (MB). Prior literature shows that debt contracting is probably the main determinants of conservatism (Watts, 2003a; Ball et al., 2008; Zhang, 2008, Gormley et al., 2013; Jayaraman and Shivakumar, 2013). Khan and Watts (2009) use leverage to capture debt-contracting related pressures for conservative accounting. Size is also a proxy for litigation and regulatory costs, which are also drivers of conservatism (see Watts, 2003a). Finally, the market-to-book ratio is negatively related to conditional conservatism. One common explanation for this is that the market-to-book ratio captures unconditional conservatism, which pre-empts and is negatively related to conditional conservatism (Beaver and Ryan, 2005).

We estimate two variants of the Khan and Watts (2009) measure. In the first one we just replicate Khan and Watts (2009) and apply their method to the Basu (1997) earnings-return regression. In the second one, we deviate from Khan and Watts (2009)

and we apply their method to the model of conservatism based on the different persistence of positive and negative changes in earnings also proposed by Basu (1997).

The coefficients of Basu's (1997) earnings-returns regression

Khan and Watts (2009) base their measure on the coefficients of Basu's (1997) asymmetric timeliness cross-sectional regression of earnings on stock returns. The Basu's (1997) cross-sectional regression is,

$$X_i = \alpha_0 + \alpha_1 DR_i + \alpha_2 R_i + \alpha_3 DR_i * R_i + e_i \quad (2)$$

where *i* indexes the firm, *X* is defined as *EPS* (COMPUSTAT#18/#54) scaled by the beginning share price (COMPUSTAT #199) and *R* is return obtained by the change in share price over a one-year window scaled by lagged share price. DR_i is a dummy variable equal to 1 when $R<0$ and 0 otherwise.

Basu (1997) assumes that price reflects information received from sources other than current earnings, and price is a leading indicator of accounting earnings. Conservative accounting results in earnings being timelier to the publicly available negative unexpected returns, capturing bad news, than positive unexpected returns, capturing good news (Basu, 1997). The coefficient, α_2, is the measure of good news timeliness, representing the sensitivity of earnings to positive returns. The measure of incremental timeliness for bad news over good news, or conditional conservatism, is α_3. The total bad news timeliness is $\alpha_2 + \alpha_3$.

Khan and Watts (2009) specify that the timeliness of good news (hereafter, *GScore_ret*) each year and the incremental timeliness of bad news (*CScore_ret*) are linear functions of three firm-specific characteristics: size, market-to-book (MB) and leverage each year.

$$GScore\_ret = \alpha_2 = \mu_1 + \mu_2 Size_i + \mu_3 MB_i + \mu_4 Leverage_i \quad (3)$$

$$CScore\_ret = \alpha_3 = \lambda_1 + \lambda_2 Size_i + \lambda_3 MB_i + \lambda_4 Leverage_i \quad (4)$$

where size is the natural log of market value of equity (COMPUSTAT #199*#54) and MB is the market-to-book (COMPUSTAT #199*#54/#60). Leverage is defined as the sum of short-term debt due within one year and long-term debt, divided by market value of equity ((COMPUSTAT#34 + COMPUSTAT#9) / (COMPUSTAT#199 * COMPUSTAT #25)).

Khan and Watts (2009) substitute Equations (3) and (4) into the regression Equation (2). Then, they estimate *CScore_ret* using the following annual cross-sectional linear regression model:

$$\begin{aligned} X_i = {} & \alpha_0 + \alpha_1 DR_i + R_i * (\mu_1 + \mu_2 Size_i + \mu_3 MB_i + \mu_4 Leverage_i) \\ & + DR_i * R_i * (\lambda_1 + \lambda_2 Size_i + \lambda_3 MB_i + \lambda_4 Leverage_i) \\ & + (\delta_1 Size_i + \delta_2 MB_i + \delta_3 Leverage_i) \\ & + (\delta_4 DR_i * Size_i + \delta_5 DR_i * MB_i + \delta_6 DR_i * Leverag) + e_i \end{aligned} \quad (5)$$

The two measures, *CScore_ret* and *GScore_ret*, vary across firms through cross-sectional variation in the firm-year characteristics (size, MB and *Leverage*), and over time through intertemporal variation in estimators μ_i and λ_i, and the firm-year characteristics. The empirical measure for conditional conservatism, *Con_CScore_ret*, is the three-year average of the firm-year specific proxy (*CScore_ret)*. The higher the *Con_CScore_ret*, the more conservative the firm is.

The coefficients of Basu's (1997) difference of earnings persistence regression

The second measure is based on the coefficients of the model of differences in earnings persistence for gains and losses proposed by Basu (1997) and also applied by Ball and Shivakumar (2005). Taking a different way of viewing the same phenomenon, Basu (1997) argues that less persistence (more timeliness) means that more current value relevant news is recognized contemporaneously in earnings, and more persistence

(less timeliness) refers to that less current value relevant news to be recognized in future earnings. The coefficients of timely gain and loss incorporation measure the tendency for increases and decreases in accounting income to reverse (Basu, 1997; Ball and Shivakumar, 2005).

To identify the different persistence of gains and losses we follow Basu (1997) and estimate the following model:

$$\Delta NI_t = \beta_0 + \beta_1 D\Delta NI_{t-1} + \beta_2 \Delta NI_{t-1} + \beta_3 D\Delta NI_{t-1} * \Delta NI_{t-1} + e_i \quad (6)$$

where ΔNI_t is change in income from fiscal year *t*-1 to *t*, scaled by beginning total assets (COMPUSTAT#6). $D\Delta NI_{t-1}$ is an indicator variable taking the value of 1 if ΔNI_t<0, and 0 otherwise. Timely recognition of economic losses implies they are recognized as "transitory" increases in income that tend to reverse, implying β_3<0.

To estimate a firm-year specific measure, we adapt the Khan and Watts procedure, and assume that the coefficients in Equation (6) are linear functions of three firm-specific characters: *Size*, *MB* and leverage.

$$GScore\_ni = \beta_2 = \mu'_1 + \mu'_2 Size_i + \mu'_3 MB_i + \mu'_4 Leverage_i \quad (7)$$

$$CScore\_ni = \beta_3 = \lambda'_1 + \lambda'_2 Size_i + \lambda'_3 MB_i + \lambda'_4 Leverage_i \quad (8)$$

We substitute Equations (7) and (8) into the regression Equation (6). Thus, we estimate *CScore_ni* using the following annual cross-sectional regression:

$$\begin{aligned}\Delta NI_t = {} & \beta_0 + \beta_1 D\Delta NI_{t-1} + \Delta NI_{t-1} * (\mu'_1 + \mu'_2 Size_i + \mu'_3 MB_i + \mu'_4 Leverage_i) \\ & + D\Delta NI_{t-1} * \Delta NI_{t-1} * (\lambda'_1 + \lambda'_2 Size_i + \lambda'_3 MB_i + \lambda'_4 Leverage_i) \\ & + (\delta'_1 Size_i + \delta'_2 MB_i + \delta'_3 Leverage_i) \\ & + (\delta'_4 D\Delta NI_{t-1} * Size_i + \delta'_5 D\Delta NI_{t-1} * MB_i) \\ & + (\delta'_6 D\Delta NI_{t-1} * Leverage_i) + \epsilon_i \end{aligned} \quad (9)$$

The second measure for conditional conservatism, *Con_CScore_ni*, is the three-year

average of the firm-year specific proxy for conditional conservatism (*CScore_ni*). The higher the *Con_CScore_ni*, the more conservative the firm is.

3.4 Sample, Descriptive Statistics and Results

3.4.1 Sample selection

Our initial sample consists of all available firms on the annual industrial and research COMPUSTAT North America databases between 1990 and 2007, excluding regulated firms (SIC codes between 4400 and 4999) and banks and financial institutions (SIC codes between 6000 and 6999). We drop observations with missing data of income before extraordinary items and/or number of common shares outstanding. A few observations of *EPS* take on extreme values. Therefore, we eliminate the upper and lower 1% of the *EPS* for each year (Burgstahler and Dichev, 1997). This yields a sample of 83,443 firm-year observations from 1990 to 2007. To carry out our tests on whether market rewards to five-year stream of increasing earnings increase with conditional conservatism, we first constrain the sample to firms with at least five years of earnings history and 39,275 firm-year observations remain. We require profit-making firms for our estimation sample and this criterion eliminates 14,129 observations of negative earnings, yielding 25,146 observations from 1995 to 2007. Finally, the sample for the regression analysis varies with each measure of conditional conservatism.

3.4.2 Descriptive statistics

Table 1 contains descriptive statistics of the largest sample for which we report regression results. Of the 22,605 firm-year observations, 2,088 observations correspond to firms with a five-year pattern of earnings increases. Total accruals scaled by lagged total assets (TA/A) are on average negative. The market-to-book ratio (*MB*) is well above one, suggesting the presence of unconditional conservatism. Special items scaled

by lagged total assets (special items/A) are on average negative, consistent with the results in prior research (e.g., Callen et al. 2010; García Lara et al., 2011).

Table 1 also presents means for earnings beaters (firms with a five-year pattern of increasing earnings) and non-earnings beaters (firms without a five-year pattern of increasing earnings) separately and t-tests for differences in means across the two subsamples. Earnings beaters have significantly higher share price, earnings, *EPS*, CFO and returns than non-earnings beaters. Non-earnings beaters have significantly lower sales, total assets, market capitalization (MV), market-to-book ratio (MB) and size than earnings beaters. Earnings scaled by lagged total assets (Earnings/A) is 0.13 for earnings beaters versus 0.08 for non-earnings beaters and the difference is significant. The value of CFO scaled by lagged total assets (CFO/A) is 0.16 for earnings beaters and it is significantly higher than scaled CFO for non-earnings beaters (0.12). Total accruals scaled by lagged total assets (TA/A) are similar for earnings beaters and for non-earnings beaters and not significantly different. The scaled special items (special items/A) are not significantly different from earnings beaters to non-earnings beaters. The average of periodic non-operating accruals (NonAccr) is not significantly different across the two subsamples.

Table 1 also presents the distribution of our four measures of conditional conservatism. The statistics of the measures are given in terms of their magnitudes. The first measure of conservatism, Con_Earkew, the negative of skewness of earnings deflated by the skewness of CFO, is -0.62 for earnings beaters compared to -1.06 for non-earnings beaters, but the difference is not significant. The second measure of conservatism, *Con_NonAccr*, the negative of accumulated nonoperating accruals over five years deflated by five-year accumulated total assets, is 0.03 for earnings beaters versus 0.02 for nonearnings beaters and the difference is significant. The difference of

the third measure, *Con_CScore_ret*, between earning beaters and non-earnings beaters is not significant. The fourth measure of conditional conservatism, *Con_CScore_ni*, is 0.30 for earnings beaters and -0.06 for non-earnings beaters and the difference is significant. In addition, earnings beaters report significantly higher growth in book value of equity (*Growth*5) and lower financial risk (*Leverage*), compared with non-earnings beaters.

[Insert Table 1]

Table 2 shows the correlation matrix for firm characteristics and for the four measures of conditional conservatism used in this study. Table 2 Panel A presents Pearson correlations between firm characteristics. Share price (*PRICE*) exhibits strong positive correlation with earnings, *EPS*, *Size*, *Growth5*, and BVS, and significantly negative correlation with non-operating accruals and Leverage. Consistent with prior studies, earnings are positively correlated with scaled CFO (0.03) and negatively correlated with non-operating accruals and Leverage. *EPS* exhibits strong positive correlation with scaled cash flows, size, *Growth5* and BVS and negative correlation with leverage.

In Panel B, we show the correlation matrix between the measures of conditional conservatism interacted with *DBEAT*5 (dummy capturing whether the firm reports a 5 year stream of earnings increases). The negative of the skewness of earnings, *DBEAT5*Con_Earskew*, does not exhibit strong correlation with the other three measures. The negative accumulated non-operating accruals (*DBEAT5*Con_NonAccr*) present strong positive correlation with two CScore measures and the correlation coefficients are 0.28 and 0.33, respectively. Moreover, the two CScore measures are

significantly correlated.

[Insert Table 2]

3.4.3 Empirical results

We estimate Equation (1) using standard errors clustered by firm and year to control for serial correlation and cross-sectional dependence (Petersen, 2009). We include year and industry dummies to control for fixed effects.

Table 3 reports the regression-based tests regarding whether market participants assign higher price-earnings multiples to earnings beaters that are more conditionally conservative. In particular, the measures for conditional conservatism in Table 3 are the negative of the skewness of earnings ($CON\_Earskew$) and accumulated nonoperating accruals ($CON\_NonAccr$). The first column shows baseline results of basic price-earnings multiples and other factors that theory suggests and prior empirical work has shown to have significant effects on share price. The results are consistent with our predictions regarding significantly positive coefficients on growth of book value of equity ($EPS * Growth5$) (4.993, t = 2.88) and on book value of equity per share (BVS) (1.258, t = 3.60) and significantly negative coefficients on earnings variability ($EPS * Evar$) (0, t = -1.80) and on leverage ($EPS * Leverage$) (-2.481, -5.98). Column 2 shows that the coefficient on the variable $EPS * DBEAT5$ is significant and positive (2.940, t = 4.51), consistent with Barth et al. (1999) that firms with a five-year pattern of increasing earnings have higher price-earnings multiples than other firms.[8]

[8] Although a five-year pattern is an arbitrary choice, untabulated tests show that market participants also assign higher price-earnings multiples to firms that have patterns of consecutive earnings increases from

In column 3, the coefficient of $DBEAT5$ is 2.945 (t = 4.52), and the coefficient of the interaction term between $DBEAT5$ and the first measure of conditional conservatism, the skewness of earnings ($CON\_Earskew$), is 0.006 (t = 3.09), indicating that market participants assign a larger price-earnings multiples to firms with a stream of earnings increases that are more conservative, which is consistent with our predictions.[9] Column 4 shows that market participants reward earnings beaters (2.309, t = 3.62), and the coefficient on the interaction term of $DBEAT5$ and the five-year accumulated nonoperating accruals ($CON\_NonAccr$) is significant and positive (24.66, t = 1.87), consistent with our hypothesis that firms with a pattern on earnings increases obtain higher reward if they commit to more conditional conservative reporting.

[Insert Table 3]

We conduct the same tests using our two CScore measures as proxies for conditional conservatism and the results are shown in Table 4. Column 1 shows that the coefficient on earnings beaters is 3.072 (t = 2.68) and the coefficient on $EPS * DBEAT5 * Con\_CScore\_ret$ is 0.153 (t = 1.67), indicating that price-earnings multiples are higher for more conservative earnings beaters than for other earnings beaters after controlling for risk.[10]

We repeat the analysis using the other CScore measure, $Con\_CScore\_ni,$ as a proxy for conditional conservatism. Column 2 in Table 4 shows that the coefficient on

two years through eleven years.

[9] We obtain similar inferences if we use net income (COMPUSTAT #172).

[10] We do not control for size because the interaction variable *DBEAT*5**size* is highly correlated with *DBEAT*5 and the correlation coefficient is 0.96. Ryan (2006) argues that the main drawback of controlling for many factors in conservatism literature is an inevitable association between these factors and the variables of interest.

interaction term $EPS * DBEAT5 * Con\_CScore\_ni$ is 3.456 (t = 3.35) after controlling for market-to-book and leverage, indicating that market participants assign additional rewards to firms use more conservative accounting on earnings increases.

[Insert Table 4]

Overall, the results in Table 4 are consistent with the preceding findings in Table 3 that market participants assign higher price-earnings multiples to earnings beaters with a five-year pattern of increasing earnings when these earnings beaters' accounting is more conditionally conservative.

3.5 Summary and Conclusions

In this paper, we exam whether conditional conservatism affects market rewards to firms that achieve a long stream of consecutive increases in earnings. We hypothesize that market rewards are reinforced when firms with an earnings stream exhibit a higher degree of conditional conservatism. The argument builds on the idea that conditional conservatism is a governance mechanism that curbs income-increasing earnings management and, thus, reduces information asymmetries between managers and outside investors. Thereby, the stream of consecutive earnings increases is more likely to be genuine, and not fabricated through earnings management, when the firm is more conditionally conservative.

We capture conditional conservatism using four firm-year specific measures: the skewness of earnings deflated by the skewness of cash flows and accumulated nonoperating accruals deflated by accumulated total assets, based on the work of Givoly

and Hayn (2000), and two CScore measures, based on the work of Khan and Watts (2009).

Using a large US sample for the period 1995-2007, our results show that conservative accounting strengthens market rewards to firms achieving a five-year pattern of earnings increases. The results are based on tests that include controls for growth opportunities, financial and operating risks, and other factors that are potentially correlated with measures of conditional conservatism and stock prices.

Appendix

Variable Descriptions and Definitions

Variables	Data Description and COMPUSTAT Item Number
PRICE	Close price-fiscal year end (#199)
Earnings	NIBE, net income before extraordinary items, COMPUSTAT #18
DBEAT5	An indicator variable equals to 1 when a firm reports 5-year patterns of increasing positive earnings and 0 otherwise
Shares	Number of common shares outstanding for basic EPS, COMPUSTAT #54
EPS	net income before extraordinary items divided by number of shares outstanding for basic EPS (#54)
CFO	Cash flow from operations (#308)
R	Return, (Price - $Price_{t-1}$ / $Price_{t-1}$)
DR	An indicator variable equal to 1 when R<0 and 0 otherwise
Sales	Net sales (#12)
MV	Market value of equity (#199*#25)
MB	Market-to-book ratio, market capitalization (#199*#25) divided by book value of equity (#60/# 54)
Size	Log of the market value of equity
A	Total assets (#6)
Earnings/A	NIBE scaled by lagged total assets
CFO/A	Cash flows from operations scaled by lagged total assets
TA/A	Total accruals scaled by lagged total assets, the difference between Earnings and CFO
Special items/A	Special items (#17) divided by total assets
NonAccr	Net income (#172) + depreciation (#14) – CFO (#308) – Δ accounts receivable (#2) + Δ inventories (#3) – Δ prepaid expenses (#160) + Δ accounts payable (#70) + Δ taxes payable (#71)
Con_Earskew	-1*(The skewness of Earnings deflated by the skewness of CFO)
Con_Nonaccr	-1*(Five-year accumulated NonAccr deflated by accumulated total assets)
Con_CScore_ret	Estimated by substituting size, market-to-book and leverage to coefficient of incremental timeliness of bad news (C_Score_ret) relative to good news from Basu's (1997) regression
Con_CScore_ni	Estimated by substituting size, market-to-book and leverage to coefficient of incremental timeliness of bad news (C_Score_ret) relative to good news from Basu's (1997) transitory earnings regression
Leverage	The sum of short-term debt (#34) and long-term debt (#9) divided by market capitalization (#199*#25)
Evar	Variance of the past five years' percentage change in earnings $(NIBE_{i,t} - NIBE_{i,t-1})/abs(NIBE_{i,t-1})$
Ggrowth5	Five-year compound annual growth rate of book value of equity (#60), $(BV_t/BV_{t-6})^{1/5}$-1
BVS	Book value of equity per share (#60/# 54)

Note: All variables are in millions of dollars except number of common shares outstanding for basic EPS (#54), which units are millions.

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Table 1
Descriptive Statistics of Key Variables

Full Sample, 1995-2007					Ear. Beaters	Non Beaters	t-statistic
Variable	Mean	Median	Std. Dev.	N	Mean	Mean	(Diff. in Mean)
PRICE	19.072	14.20	22.56	22,605	27.50	18.22	18.05***
Returns	0.13	0.12	0.46	22,441	0.18	0.13	4.30***
Earnings	214.74	19.23	981.01	22,605	480.58	187.69	13.05***
EPS	1.04	0.74	1.10	22,605	1.46	0.99	18.69***
Earnings/A	0.08	0.07	0.07	22,605	0.13	0.08	31.26***
CFO	368.42	30.94	1622.97	22,443	720.10	332.51	10.42***
CFO/A	0.12	0.11	0.27	22,443	0.16	0.12	7.62***
Total Accruals (TA)	-153.78	-9.11	793.16	22,243	-236.69	-145.31	-5.00***
Total Assets (A)	3440.72	349.77	17648.40	22,605	7291.31	3048.86	10.24***
TA/A	-0.03	-0.04	0.27	22,443	-0.03	-0.03	0.44
Sales	3259.81	390.58	12921.84	22,605	6582.32	2921.68	12.37***
MV	4517.63	393.84	19808.96	22,550	11384.65	3816.87	16.73***
MB	3.17	2.08	12.94	22,549	4.42	3.04	4.65***
Size	5.94	5.98	2.32	22,550	7.38	5.80	30.40***
Special items/A	-0.02	0.00	1.50	20,574	-0.00	-0.02	0.63
NonAccr	-55.23	-2.37	1297.52	22,342	-259.98	-34.33	-0.84
Con_Earskew	-1.02	-0.19	228.55	22,274	-0.62	-1.06	0.08
Con_Nonaccr	0.02	0.02	0.13	21,853	0.03	0.02	2.66***
Con_CScore_ret	2.28	0.53	38.32	22,530	1.77	2.33	-0.64
Con_CScore_ni	-0.02	-0.05	1.12	22,530	0.30	-0.06	14.10***
Leverage	0.39	0.15	1.07	22,550	0.17	0.41	-9.83***
Evar	945.35	1.54	32101.12	22,605	10.21	1040.52	-1.397
Ggrowth5	0.17	0.13	0.24	22,605	0.27	0.16	21.50***
BVS	8.43	6.47	8.85	22,605	8.13	8.09	0.20

Table 1 (continued)

*/**/*** indicate Significance at the 10%/5% /1% .

PRICE = close price per share at the fiscal year end (Compustat #199). Returns = (Price - $Price_{t-1}$ / $Price_{t-1}$). Earnings = net income before extraordinary items (Compustat #18). EPS = net income before extraordinary items divided by number of shares outstanding for basic EPS (Compustat #54). A = total assets (Compustat #6). Earnings/A = net income before extraordinary items divided by total assets. CFO = cash flows from operations (Compustat #308). CFO/A = cash flows from operations divided by lagged total assets. Total Accruals (TA) = the difference between net income before extraordinary items and cash flows from operations. TA/A = total accruals divided by lagged total assets. Sales = net sales (Compustat #12). MV = Market capitalization, close price per share times the number of common shares outstanding (Compustat #25). MB = market capitalization (#199*#25) divided by book value of equity (#60/# 54). Size = Log of the market value of equity. Special items/A = Special items (#17) divided by total assets. NonAcrr = Nonoperating Accruals, net income (#172) + depreciation (#14) – CFO (#308) – Δ accounts receivable (#2) + Δ inventories (#3) – Δ prepaid expenses (#160) + Δ accounts payable (#70) + Δ taxes payable (#71) Con_Earskew = -1*(the skewness of Earnings deflated by the skewness of CFO). Con_NonAcc = -1*(five-year accumulated NonAccr deflated by accumulated total assets). Con_CSore_ret = the incremental timeliness of bad new relative to good news from Basu's (1997) regression and is a function of three firm-specific characters: size, market-to-book ratio and leverage ratio. Con_Cscore_ni = the incremental timeliness of bad new relative to good news from Ball and Shivakumar's (2005) regression and is a function of three firm-specific characters: size, market-to-book and leverage ratio. Leverage = sum of short-term debt (Compustat #34) and long-term debt (Compustat #9) divided by market capitalization. Evar = variance of the past 5 years' percentage change in earnings. Growth5= 5-year compound growth rate of book value of equity. BVS = book value of equity per share.

Table 2 Correlation Matrix among Key Variables

Panel A: Correlation Matrix among Key Variables

	Firm Characteristics							Controls					
	PRICE	Returns	Earnings	EPS	CFO/A	MB	Size	Special items/A	NonAccr	Leverage	Evar	Growth5	BVS
Returns	0.10**	1											
Earnings	0.21**	-0.01	1										
EPS	0.62**	0.04**	0.27**	1									
CFO/A	0.40**	0.08**	0.03**	0.05**	1								
MB	0.05**	0.05**	0.03**	0.01	0.02	1							
Size	0.50**	0.06**	0.41**	0.42**	0.10**	0.08**	1						
Special items/A	0.01	0.00	0.00	0.01	0.00	0.00	0.02	1					
NonAccr	-0.04**	0.00	-0.27**	-0.02	-0.01**	-0.00	-0.09**	0.00	1	-0.01	0.00	-0.02	-0.02
Con_Earskew	0.00	0.00	0.00	0.00	-0.00	0.00	0.00	0.00	-0.00	0.00	-0.00	-0.02	-0.00
Con_NonAccr	0.01	0.01	-0.00	-0.01	0.02	-0.17**	0.02	-0.00	-0.04**	-0.01	0.00	-0.05**	-0.02
Con_CScore_ret	-0.01	-0.11**	-0.01	-0.01	0.01**	0.00	-0.02	-0.00	0.00	0.02	0.00	-0.00	-0.01
Con_CScore_ni	0.27**	-0.08**	0.21**	0.21**	0.05**	0.01	0.53***	0.01	-0.03**	-0.24**	-0.00	0.10**	0.15**
Leverage	-0.10**	-0.15**	-0.03**	-0.03**	0.00	-0.03**	-0.18*	-0.01	-0.01	1	-0.00	-0.09**	0.01
Evar	-0.01	0..01	-0.01	-0.01	-0.01	-0.00	-0.01	0.00	0.00	-0.00	1	0.00	-0.01
Growth5	0.10**	-0.02	0.01	0.03**	-0.00	-0.07**	0.16**	0.00	-0.01	-0.09**	0.00	1	0.05**
BVS	0.69**	-0.07**	0.09**	0.60**	0.11**	-0.07**	0.29**	0.01	-0.02	0.01	-0.01	0.05**	1

Panel B: Correlation Matrix among Measures of Conditional Conservatism

	DBEAT5*Con_Earskew	DBEAT5*Con_NonAccr	DBEAT5*Con_CScore_ret
DBEAT5*Con_Earskew	1		
DBEAT5*Con_NonAccr	0.02	1	
DBEAT5*Con_CScore_ret	-0.00	0.28 **	1
DBEAT5*Con_CScore_ni	0.01	0.33 **	0.27 **

Table 3
Analysis of the Effects of Conditional Conservatism on Market Regards to Earnings Beaters

Earnings-based Measures of Conditional Conservatism Based on Givoly and Hayn (2000)

		1	*2*	*3*	*4*
Variable	*Predicted Sign*	*Coef. (t-statistic)*	*Coef. (t-statistic)*	*Coef. (t-statistic)*	*Coef. (t-statistic)*
Intercept	**?**	1.061	1.057	1.095	1.153
		(0.99)	(0.97)	(1.00)	(1.04)
EPS	+	6.228***	5.749**	5.774***	5.763***
		(3.73)	(3.37)	(3.35)	(3.31)
EPS*DBEAT5	+		2.940***	2.942***	2.309***
			(4.51)	(4.52)	(3.62)
EPS*DBEAT5*Con_Earskew	+			0.006***	
				(3.09)	
EPS*DBEAT5*Con_NonAccr	+				24.657*
					(1.87)
EPS*Growth5	+	4.993***	4.792**	4.819**	4.9738**
		(2.88)	(2.46)	(2.49)	(2.35)
EPS*Leverage	-	-2.481***	-2.389***	-2.321***	-2.323***
		(-5.98)	(-5.80)	(-5.52)	(-5.36)
EPS*Evar	-	-0.000*	-0.000	-0.000*	-0.000*
		(-1.80)	(-1.59)	(-1.91)	(-1.92)
BVS	+	1.258***	1.279***	1.270***	1.271***
		(3.60)	(3.65)	(3.58)	(3.55)
R-Squared		0.574	0.579	0.584	0.583
Nobs		22605	22605	22217	21817

Year and industry dummies are included in all models. t-statistic in parentheses are based on firm and year clustered standard errors. */**/*** indicate significance at 10%/5%/1% (two-tailed).
PRICE = close price per share at the fiscal year end (Compustat #199). EPS = net income before extraordinary items divided by number of shares outstanding for basic EPS (Compustat #54). DBEAT5 = indicator variable equals 1 if a firm reports a 5-year pattern of increasing positive earnings and 0 otherwise. Con_Earskew = -1*(the skewness of Earnings deflated by the skewness of CFO). Con_NonAcc = -1*(five-year accumulated NonAccr deflated by accumulated total assets). Leverage = sum of short-term debt (Compustat # 34) and long-term debt (Compustat # 9) divided by market capitalization. Evar = variance of the past 5 years' percentage change in earnings. Growth5 = 5-year compound growth rate of book value of equity. BVS = book value of equity per share.

Table 4

Analysis of the Effects of Conditional Conservatism on Market Regards to Earnings Beaters

CScore Measures of Conditional Conservatism Based on Khan and Watts (2003)

		earnings-return regression	transitory income regression
Variable	*Predicted Sign*	*Coef. (t-statistic)*	*Coef. (t-statistic)*
Intercept	**?**	0.992	1.163
		(0.92)	(1.08)
EPS	+	5.513***	5.491**
		(3.24)	(3.22)
EPS*DBEAT5	+	3.072***	1.560
		(2.68)	(1.35)
EPS*DBEAT5*Con_CScore_ret	+	0.153*	
		(1.67)	
EPS*DBEAT5*Con_CScore_ear	+		3.456***
			(3.35)
EPS*Growth5	+	5.014***	5.043***
		(2.70)	(2.74)
EPS*Leverage	-	-2.104***	-2.105***
		(-5.57)	(-5.56)
EPS*Evar	-	-0.000	-0.000
		(-1.51)	(-1.52)
BVS	+	1.297***	1.298***
		(3.70)	(3.70)
EPS*DBEAT5*Leverage		-7.489***	-6.328***
		(-5.10)	(-4.22)
EPS*DBEAT5*MB		0.365**	0.349**
		(2.44)	(2.45)
R-Squared		0.59	0.59
Nobs		22529	22529

Year and industry dummies are included in all models. t-statistic in parentheses are based on firm and year clustered standard errors. */**/*** indicate significance at 10%/5%/1% (two-tailed).

PRICE = close price per share at the fiscal year end (Compustat #199). EPS = net income before extraordinary items divided by number of shares outstanding for basic EPS (Compustat #54). DBEAT5 = indicator variable equals 1 if a firm reports a 5-year pattern of increasing positive earnings and 0 otherwise. C_Sore = the incremental timeliness of bad news relative to good news from Basu's (1997) regression and is a function of three firm-specific characters: size, market-to-book and leverage. Leverage = sum of short-term debt (Compustat #34) and long-term debt (Compustat # 9) divided by market capitalization. Evar = variance of the past 5 years' percentage change in earnings. Growth5 = 5-year compound growth rate of book value of equity. BVS = book value of equity per share. Size is not included in controls because the correlation coefficient between EPS*DBEAT5 and EPS*DBEAT5*size is 0.97, and EPS*DBEAT5 is our primary variable of interests.

Chapter 4. Analysis of Patterns of Growth in Sales

4.1 Introduction

Since earnings are the net of sales revenue and expenses, a pattern of increasing earnings can be sustained by growth in sales and/or reduction in expenses. The competitive strategy literature, starting with Porter (1980, 1985) indicates that growth supported by increases in sales is more sustainable than growth supported by cutting expenses. This is so as growth supported by increasing revenues is indicative of a strong competitive advantage (firms products or services being highly demanded and also being difficult to emulate, reflecting the success of underlying product differentiation strategy). Based on this literature, Ghosh et al. (2005) show that firms reporting consecutive earnings increases together with sales growth have higher price-earnings multiples than firms reporting earnings increases through reductions in expenses. Their results are in line with those in Ertimur et al. (2003), who show that the market reaction to earnings surprises is different when these surprises are revenue-driven surprise or expense-driven surprises.

In this study, we focus on market rewards to a long stream of consecutive increases in earnings. We do not address whether the rewards differ for firms that achieve the rewards through increases in revenues or decreases in expenses. Instead, we argue, based on the results of prior research on competitive strategy that sustaining a long stream of earnings increases (five years in our main tests) seems complicated just reducing expenses. Given this, we use sales growth to gauge whether the stream of consecutive increases in earnings is genuine. We argue that a firm with annually increasing earnings is non-suspect of having engaged in earnings management to fabricate the earnings pattern whenever the earnings pattern is supported by the same

pattern of sales increases.

4.2 Research Design and Sample Selection

As in the prior two chapters we adapt the model used in Barth et al. (1999), incorporating an additional variable to capture whether a firm with a long stream of earnings increases (we consider five years in our main tests) also present a stream of increases in sales. The model is as follows:

$$\begin{aligned} PRICE_{i,t} = \; & \beta_0 + \beta_1 EPS_{i,t} + \beta_2 EPS_{i,t} * DBEAT5_{i,t} \\ & + \beta_3 EPS_{i,t} * DBEAT5_{i,t} * DSALE5_{i,t} \\ & + \beta_4 EPS_{i,t} * Growth5_{,i,t} + \beta_5 EPS_{i,t} * Leverage_{i,t} \\ & + \beta_6 EPS_{i,t} * Evar_{i,t} + \beta_7 BVS_{i,t} + \varepsilon_{i,t} \end{aligned} \quad (1)$$

Where i indexes the firm and t indexes the year. PRICE is share price at the fiscal year end (COMPUSTAT #199). EPS is income before extraordinary items, NIBE (COMPUSTAT #18), divided by number of common shares outstanding for basic EPS, (COMPUSTAT #54).

Throughout our tests and to identify firms that report a pattern of increasing earnings, we focus on income before extraordinary items, NIBE. Equation (1) includes an indicator variable $DBEAT5_{it}$ that takes value 1 if firm i continuously reports increasing positive earnings for five years, and 0 otherwise. We expect that β_2 is positive, indicating that firms with a five-year pattern of increasing positive earnings have higher price-earnings multiples than other firms (Barth et al., 1999).

We refer to firms with a five-year pattern both in earnings increases and sales increases as non-suspect sales beaters. We define non-suspect sales beaters using an interaction indicator of $DBEAT5_{i,t} * DSALE5_{i,t}$ that takes value 1 if firm i reports both

five-year patterns of earnings increases and sales increases in year t, and 0 otherwise. The indicator variable $DSALE5_{i,t}$ takes the value of 1 if firm i has a five-year pattern of increasing net sales revenue (COMPUSTAT #12) in year t, and 0 otherwise. Regarding whether there are additional rewards to non-suspect sales beaters, we expect coefficient β_3 to be positive, implying that non-suspect sales beaters $(DBEAT5_{it} * DSALE5_{it} = 1)$ enjoy higher price-earnings multiples than the rest of firms with a pattern of increasing earnings $(DBEAT5_{it} * DSALE5_{it} = 0)$.

We use the same sample as in Chapter 2. Table 1 Panel A presents the number of firms with five-year patterns of increasing positive earnings, cash flows and sales revenues from 1990 to 2007. Column 4 shows the number of firms with different patterns of increasing sales. The number declines at a rate of around 30% with the length of patterns. Column 6 shows the percentage of firms with a pattern of increasing earnings that have also the same pattern of increasing sales. We can see that the percentage is quite large. This might be due to firms just growing in size. Given this, the focus on our tests is, in fact, the firms that while reporting a pattern of increasing earnings do not report a pattern of increasing sales. These firms can be safely classified as suspect, and we expect them to obtain lower market rewards (if any rewards at all) in the stock market.

In Panel B, we show that from the 2,088 firm-year observations with a five-year pattern of consecutive increases in earnings, we classify 81% (1,690) as non-suspect sales beaters. That is, 1,690 firm-year observations also present a five year pattern of consecutive increases in sales revenues. In Panel C we show the correlation matrix between the non-suspect and the four types of suspect firms. Non-suspect sales beaters are positively correlated with all the suspect measures. The largest correlation (46%) corresponds to non-suspect sales beaters and suspect firms with discretionary expenses.

These large correlations are somehow expected given the large number of earnings beaters that are also sales beaters. Thus, the main focus of our tests is on the firms that report the pattern of increasing earnings without the same pattern in sales.

[Insert Table 1]

4.3 Empirical results

Table 2 reports the regression-based tests regarding pricing effects on non-suspect CFO beaters (firms with five-year patterns both in earnings increases and cash flow increases), and non-suspect sales beaters(firms with five-year patterns both in earnings increases and sales increases). Column 4 shows that the coefficient on $EPS * DBEAT5 * DSALE5$ is significantly positive (2.670, t = 3.80), indicating that non-suspect sales beaters have higher price-earnings multiples than other firms, consistent with our prediction. The result is consistent with Ghosh et al. (2005) that firms with sales-supported earnings increases are rewarded. In addition, the measure of non-suspect sales beaters nearly captures the information of earnings beaters, resulting in the insignificant coefficient on earnings beaters (0.821, t = 1.34). This is expected, as the coefficient on earnings beaters is now capturing just the effect of firms that report the patterns of earnings increases without growth in sales. That is, this coefficient captures now the market rewards for suspect beaters. As we can see, suspect firms are not rewarded by market participates.

Finally, Column 5 shows that coefficient on the variable $EPS * DBEAT5$ is insignificantly (0.577, t = 0.97), and the coefficient on the interaction term $DBEAT5 *$

$DCFO5$ is 3.403 (t = 2.47), indicating that market participants assign higher price-earnings multiples to non-suspect beaters with growth of cash flows. In addition, the positive price-earnings multiples of the interaction term $DBEAT5 * DSALE5$ is 2.386 (t = 3.27) indicate that market participants assign higher rewards to non-suspect beaters with growth of sales, and that suspect firms are not rewarded.

[Insert Table 2]

Given the large number of firms with a large stream of increases in earnings that also present a stream of increases in sales, an alternative way to show the results in Table 2 that might be easier to interpret is creating the dummy variable the other way around. That is, we can create an indicator variable $SUSPECT\_REV5_{i,t}$ taking the value of 1 if firm i does not report increasing sales revenues for five years, and 0 otherwise. We define an interaction term $DBEAT5_{i,t} * SUSPECT\_REV5_{i,t}$ that takes value 1 if firm i reports a five-year pattern of earnings increases but not a five-year pattern of increasing sales, and 0 otherwise.

Table 3 Panel A shows that of the 2,088 earnings beaters (firms with a five-year pattern of earnings increases), 19% (398) do not report a five-year pattern of sales growth. We view this group of earnings beaters as suspect firms that might have used earnings management to maintain the earnings pattern. Panel B shows that the coefficient on $EPS_{i,t} * DBEAT5_{i,t}$ is significantly positive (3.530, t = 4.73), and the coefficient on $EPS_{i,t} * DBEAT5_{i,t} * SUSPECT\_REV5_{i,t}$ is significantly negative (-2.70, t = -3.80), meaning that market participants assign lower price-earnings multiples to

suspect firms when their pattern of increasing earnings is not achieved through sales growth.

[Insert Table 3]

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Table 1
Panel A: Number of Firms Reporting Patterns of Positive Earnings Increases, Positive CFO Increases, Both in Positive Earnings and Positive CFO Increases, and Both in Positive Earnings and Positive Sales Increases

Num. of Years	Num. of Earnings Beaters	Num. of CFO Beaters	Num. of Sales Beaters	Num. of Non-suspect CFO Beaters (% of Earnings Beaters)	Num. of Non-suspect Sales Beaters (% of Earnings Beaters)
1	21995	22468	44833	12791 (0.58)	19826 (0.90)
2	11369	9162	28058	4428 (0.39)	9935 (0.87)
3	6292	4070	18853	1806 (0.29)	5362 (0.85)
4	3601	1973	12932	813 (0.23)	3002 (0.83)
5	2088	993	8844	368 (0.18)	1690 (0.81)
6	1246	535	6052	18 (0.15)	984 (0.79)
7	767	291	4199	105 (0.14)	610 (0.80)
8	484	157	2961	61 (0.13)	390 (0.81)
9	313	82	2088	33 (0.11)	249 (0.80)
10	203	41	1461	14 (0.07)	160 (0.79)
11	136	19	1039	3 (0.02)	107 (0.79)
12	95	9	760	0 (0)	72 (0.76)

Earnings = net income before extraordinary items (Compustat #18). CFO = cash flows from operations (Compustat #308). Sales = net sales (Compustat #12)

Table 1
Panel B: Number and Percentages of Non-suspect CFO Beaters, Non-suspect Sales Beaters and Suspect Firms for a five Year Stream of Consecutive Earnings Increases

Earnings Beaters	Non-suspect CFO Beaters	Non-suspect Sales Beaters	Suspect (Accruals)	Suspect (Sales)	Suspect (Overprod.)	Suspect (Disc. Exp.)
2088	368 (18%)	1690 (81%)	396 (19%)	251 (12%)	616 (30%)	1015 (49%)

Table 1
Panel C: Correlation Matrix between Non-suspect CFO Beaters, Non-suspect Sales Beaters and the Four Types of Suspects Firms

	Non-suspect (CFO)	Non-suspect (Sales)	Suspect (accruals)	Suspect (sales)	Suspect (overprod.)
Non-suspect (Sales)	0.30 **				
Suspect (accruals)	0.13 **	0.34 **			
Suspect (sales)	0.01	0.23 **	0.12 **		
Suspect (overprod.)	0.13 **	0.34 **	0.26 **	0.28 **	
Suspect (disc. expenses)	0.25 **	0.46 **	0.39 **	0.19 **	0.44 **

** Significant at the 5% level.

Table 2
Analysis of Market Rewards to Non-suspect CFO Beaters and Non-suspect Sales Beaters

N=22,605		*1*	*2*	*3*	*4*	*5*
Variable	*Predicted Sign*	*Coef. (t-statistic)*	*Coef. (t-statistic)*	*Coef. (t-statistic)*	*Coef. (t-statistic)*	*Coef. (t-statistic)*
Intercept	**?**	1.061	1.057	1.047	1.058	1.049
		(0.99)	(0.97)	(0.96)	(0.97)	(0.96)
EPS	+	6.228***	5.749**	5.756**	5.753***	5.759***
		(3.73)	(3.37)	(3.37)	(3.37)	(3.37)
EPS*DBEAT5	+		2.940***	2.398***	0.831	0.577
			(4.51)	(3.86)	(1.34)	(0.97)
EPS*DBEAT5*DCFO5	+			3.696**		3.403**
				(2.74)		(2.47)
EPS*DBEAT5*DSALE5	+				2.670***	2.386***
					(3.80)	(3.27)
EPS*GROWTH	+	4.993***	4.792**	4.741**	4.729**	4.690***
		(2.88)	(2.46)	(2.40)	(2.38)	(2.34)
EPS*LEVERAGE	-	-2.481***	-2.389***	-2.382***	-2.383***	-2.377***
		(-5.98)	(-5.80)	(-5.80)	(-5.81)	(-5.81)
EPS*EVAR	-	-0.000*	-0.000	-0.000	-0.000	-0.000
		(-1.80)	(-1.59)	(-1.58)	(-1.58)	(-1.57)
BVS	+	1.258***	1.279***	1.280***	1.280***	1.281***
		(3.60)	(3.65)	(3.65)	(3.66)	(3.66)
R-Squared		0.574	0.579	0.580	0.580	0.580

Table 2
Analysis of Market Rewards to Non-suspect CFO Beaters and Non-suspect Sales Beaters

Year and industry dummies are included in all models. t-statistic in parentheses are based on firm and year clustered standard errors. */**/*** indicate significance at 10%/5%/1% (two-tailed).

PRICE = close price per share at the fiscal year end (Compustat #199). EPS = net income before extraordinary items divided by number of shares outstanding for basic EPS (Compustat #54). DBEAT5 = indicator variable equals 1 if a firm reports a 5-year pattern of increasing positive earnings, and 0 otherwise. DCFO5: indicator variable equals 1 if a firm reports a 5-year pattern of increasing positive cash flows, and 0 otherwise. DBEAT5*DCFO5: interaction indicator variable equals 1 if a firm reports five-year patterns both in earnings increases and in cash flows increases, and 0 otherwise.
DSALE5: indicator variable equals 1 if a firm reports a 5-year pattern of increasing positive net sales, and 0 otherwise. DBEAT5*DSALE5: interaction indicator variable equals 1 if a firm reports five-year patterns both in earnings increases and in sales increases, and 0 otherwise. Leverage = sum of short-term debt (Compustat #34) and long-term debt (Compustat #9) divided by market capitalization. Evar = variance of the past 5 years' percentage change in earnings. Growth5 = 5-year compound growth rate of book value of equity. BVS = book value of equity per share.

Table 3
Analysis of Market Rewards to Firms with a Pattern of Increasing Earnings Not Achieved through Sales Growth

Panel A: Descriptive Statistics to suspect sales firms

Num. of Years	Num. of Total Observations	Num. of Earnings Beaters	Num. of Suspect Firms (% over Earnings Beaters)
5	22605	2088	398(0.19)

Panel B: Regression Results

N=22,605

Variable	*Predicted Sign*	*Coef. (t-statistic)*
Intercept	**?**	1.058
		(0.97)
EPS	+	5.753***
		(3.37)
EPS*DBEAT5	+	3.350***
		(4.73)
EPS*DBEAT5*SUSPECT_REV5	-	-2.70***
		(-3.80)
EPS*Growth5	+	4.729**
		(2.38)
EPS*Leverage	-	-2.383***
		(-5.81)
EPS*Evar	-	-0.000
		(-1.58)
BVS	+	1.280***
		(3.66)
R-Squared		0.580

Year and industry dummies are included in all models. t-statistic in parentheses are based on firm and year clustered standard errors. */**/*** indicate significance at 10%/5%/1% (two-tailed).
PRICE = close price per share at the fiscal year end (Compustat #199). EPS = net income before extraordinary items divided by number of shares outstanding for basic EPS (Compustat #54). DBEAT5 = indicator variable equals 1 if a firm reports a 5-year pattern of increasing positive earnings, and 0 otherwise. DBEAT5*SUSPECT_REV5 = interaction indicator variable equals 1 if a firm reports a five-year pattern in earnings increases but not sales growth, and 0 otherwise. Leverage = sum of short-term debt (Compustat #34) and long-term debt (Compustat #9) divided by market capitalization. Evar = variance of the past 5 years' percentage change in earnings. Growth5 = 5-year compound growth rate of book value of equity. BVS = book value of equity per share.

Chapter 5. Conclusions

In this dissertation, I analyze whether market rewards to firms with a pattern of consecutive increases in earnings differ according to whether the pattern is either genuine or fabricated. I use growth in cash flows and conditional accounting conservatism as signals of whether the earnings stream is genuine. As signals to identify that the earnings stream is fabricated, I look at accrual-based earnings management and the manipulation of real operational activities.

The results show that market participants assign higher price-earnings multiples to firms when their earnings stream comes together with the same stream of increases in cash flows, or with a higher degree of conditional conservatism. This evidence is consistent with growth in cash flows and conditional conservatism being useful signals to identify whether the stream of consecutive earnings increases is genuine.

Regarding the market rewards to firms that engage in several earnings management types to fabricrate the earnings stream, the results show that market participants penalize firms that increase credit sales beyond whatever is advisable by common practice. I also find penalties to firms that overproduce to reduce cost of goods sold to create the pattern of increasing earnings. However, market participants do not penalize firms that opportunistically cut discretionary expenses, including R&D, advertising, and selling, general and administrative expenses, to create the earnings stream.